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From Huffman Prairie To The Moon
The History of Wright-Patterson Air force Base

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Wilbur Wright Field, winter 1918

II. WILBUR WRIGHT FIELD 1917-1925

THE EARLY YEARS OF SIGNAL CORPS AVIATION

On August 1, 1907, the Aeronautical Division was established in the Office of the Chief Signal Officer of the Army. The Division was put in charge "of all matters pertaining to military ballooning, air machines, and all kindred subjects on hand." Assigned to this new agency were Captain Charles DeForest Chandler, Corporal Edward Ward, and Private First Class Joseph E. Barrett. All three men were experienced in free balloon operations, assemblage, and maintenance.

This was especially pertinent, as the Signal Corps air fleet consisted of two free spherical hydrogen balloons. Frequent ascensions in these spherical lighter-than-air vehicles comprised aerial operations during 1907 and most of 1908, until August 12 of that year when Lieutenants Frank P. Lahm, Benjamin D. Foulois, and Thomas E. Selfridge began receiving training as pilots in the newly-acquired Signal Corps Dirigible Number One. Described as a "dirigible balloon," the aircraft required two men to operate it, and had been purchased from Thomas Scott Baldwin for $6,750.[1]

The next acquisition of the Aeronautical Division occurred August 2, 1909, when Signal Corps Airplane Number One, designed and manufactured by Wilbur and Orville Wright, was purchased for $25,000.* During October and November, Lieutenants Lahm and Foulois and Lieutenant Frederic E. Humphreys received pilot training in the heavier-than-air machine at College Park, Maryland.

Corporal Edward Ward (center) and fellow ground crewmen surround the gondola of a Signal Corps balloon. Corporal Ward was the first enlisted man assigned to the Signal Corps Aeronautical Division on August 1, 1907. He retired in 1930 with the permanent rank of first lieutenant and lived in Dayton, Ohio, until his death in 1965. *(U.S. Air Force Museum)*

*See Chapter I for specific details of this period.

Congress, however, provided no further funds to continue military aeronautics. "Economy was the watchword in Washington and vision was lacking in those who held the purse-strings."[2]

Thus, during 1910 and into the early part of the following year the Aeronautical Division's flight operations were limited to the two free balloons, one dirigible, and one airplane. Lieutenant Foulois was the Army's only active pilot, flying at Fort Sam Houston, Texas, in Signal Corps Airplane Number One. He augmented the $150 that Congress allotted him for aviation gasoline and repairs from his meager service salary. Lieutenants Lahm and Humphreys had returned to their respective branches of the service: Cavalry and Corps of Engineers. The Aeronautical Division's total personnel strength stood at 27 men (both officer and enlisted).

The situation was different in Europe. Nations there were far more visionary in recognizing the military potential of the airplane. In early 1911, France appropriated $1 million (franc equivalent) for its infant air arm. Other nations would soon follow in establishing real efforts in aviation as pressures built toward World War I.

Insulated from those pressures, the United States awakened more slowly to the potential of military aviation. In the opinion of a World War I historian, it was a "red-letter day in American aviation history" when Congress, on March 3, 1911, enacted the Appropriation Act for Fiscal Year 1912, allocating the first money ever for American military aviation.[3] Even then, the sum totalled only $125,000. Of that amount $25,000 was immediately available and it was used forthwith to purchase five new airplanes, all "pusher-type" aircraft.* A Wright Model B and a Curtiss "military model" were delivered in April to Lieutenant Foulois at Fort Sam Houston.** When flying operations moved north to College Park in the spring, both the Wright Aviation Company and the Curtiss manufacturer

(U.S. Air Force Museum)

COL. CHARLES deFOREST CHANDLER

As a captain, Charles deForest Chandler was the first Chief of the Signal Corps Aeronautical Division when it was established August 1, 1907. Chandler, a native of Cleveland, Ohio, entered the Army in 1898 as a private. He qualified as pilot of balloons in 1907, of dirigibles in 1909, and of airplanes in 1911. He was Commandant of the Signal Corps Aviation School at College Park, Maryland, 1911-1913. Captain Chandler rose in grade to the rank of colonel, and retired in 1920.

(NCR Corporation)

LT. FRANK P. LAHM

Lt. Frank P. Lahm is pictured here with a tractor-type Martin airplane, about 1915. A native of Mansfield, Ohio, Lahm graduated from the U.S. Military Academy in 1901. He was qualified by Wilbur Wright on October 26, 1909, as one of the two first American military airplane pilots. Lahm had previously qualified as a pilot of free balloons (1905) and of dirigibles (1908). He rose to the rank of brigadier general (July 1926) and appointment as Assistant Chief of the Army Air Corps. He retired from active duty on November 30, 1941.

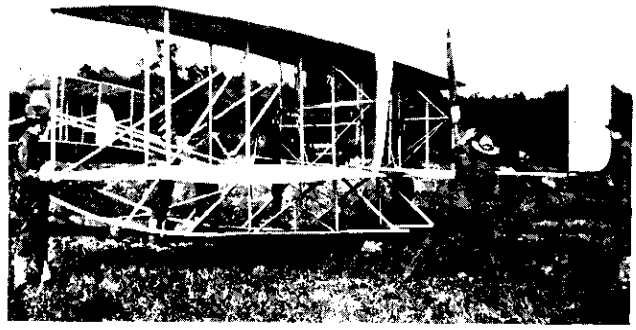
*A "pusher" airplane had the propeller mounted on the rear end of the engine or propeller shaft, thus "pushing" the aircraft forward. A "tractor" airplane had the propeller mounted on the forward end of the engine or propeller shaft, thus pulling the aircraft forward.

**The second airplane purchased by the Signal Corps was manufactured by the Glenn Curtiss Company. According to Chandler and Lahm, it was designated as a Curtiss "Type IV." The weight was 400 lbs without pilot. It was powered by an 8-cylinder engine rated at 51.2 horsepower. A passenger could be carried by sitting on the lower wing immediately behind the pilot.

(U.S. Air Force Museum)

LT. BENJAMIN D. FOULOIS

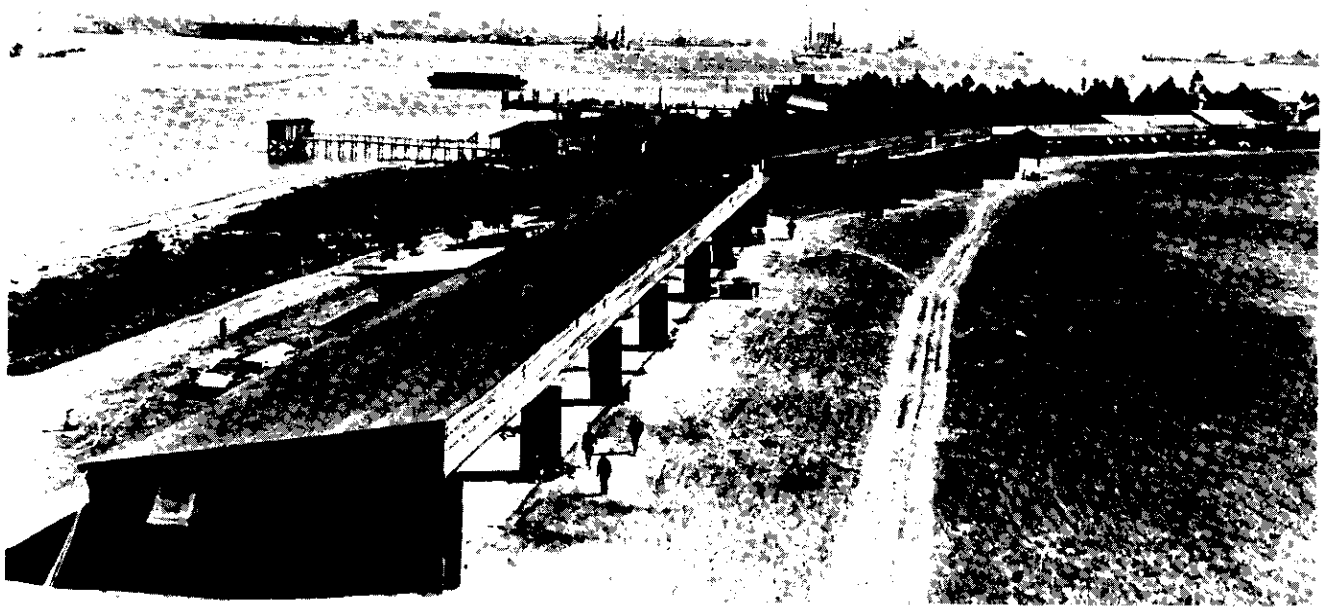
At Fort Sam Houston, Texas, in 1910, Lt. Benjamin D. Foulois sits in the "cockpit" of Signal Corps Airplane Number One, manufactured by the Wright brothers the previous year. The Army's third airplane pilot, Foulois was also the first Army dirigible pilot. As a brigadier general, he was Chief of the Army Air Service in France during World War I. He later served as Chief of the Materiel Division, Wright Field, in 1929. As a major general, he was appointed Chief of the Army Air Corps in 1931, and retired in that grade in 1935.



Wright airplane at College Park, Maryland, October 1909

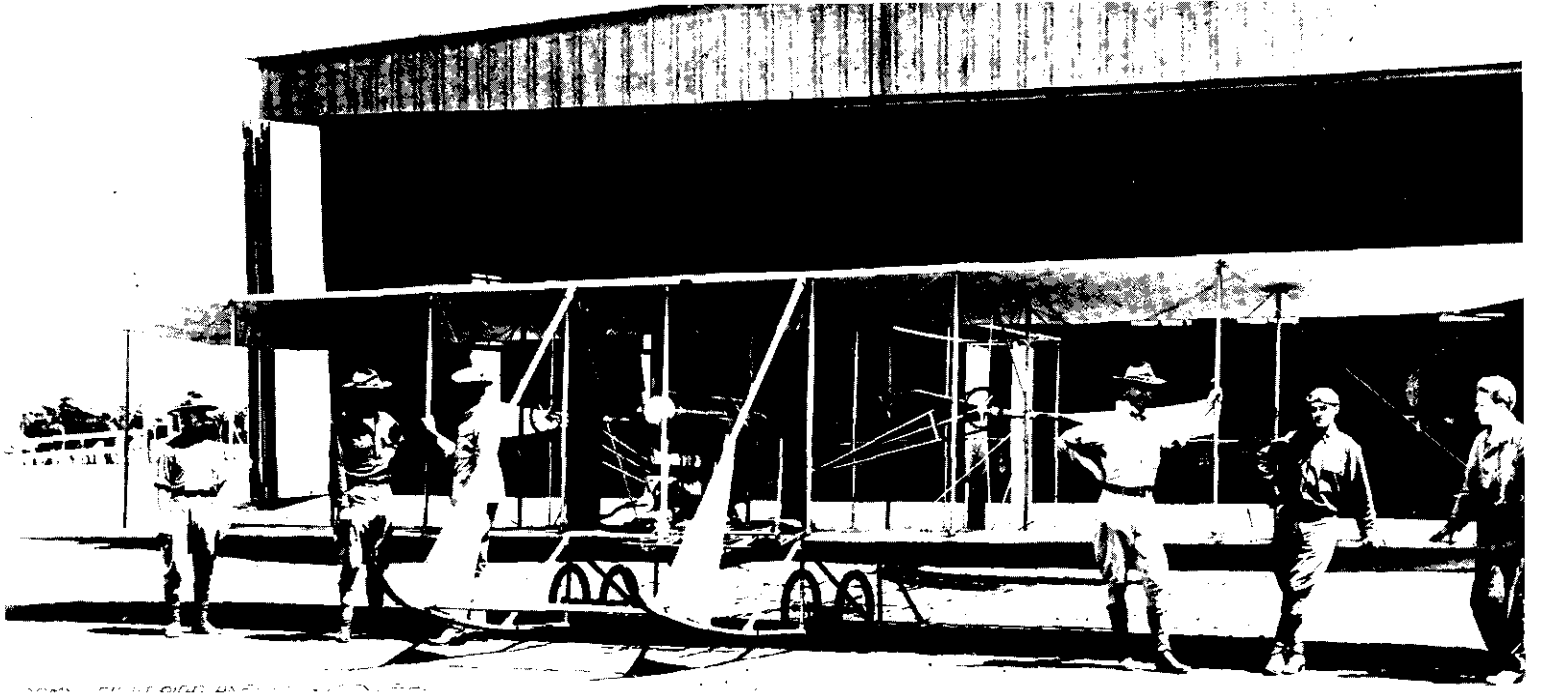
each delivered another airplane to the aviation training school. The fifth airplane purchased in the $25,000 package was a Burgess-Wright which also went to the aviation school.* By the end of 1911 the Signal Corps aviation fleet consisted of five airplanes (Signal Corps Airplane Number One had retired to the Smithsonian Institution during the year), two spherical balloons, and Dirigible Number One. The 1911 personnel strength of 23 persons included six airplane pilots. Aircraft and people were concentrated at the aviation school at College Park, Maryland, during the summer and at the school's new winter quarters in Augusta, Georgia, during that season.

Meager appropriations severely restricted the Aeronautical Division for the next two years as Congress allocated only $125,000 and $100,000 for 1912 and 1913. Austere funding notwithstanding, two significant steps forward were taken. In January 1913, the Signal Corps flying school was relocated from its College Park, Maryland, and Augusta, Georgia, locations to North Island, San Diego,



The Signal Corps flying school moved from its College Park, Maryland, and Augusta, Georgia, locations to North Island, San Diego, California, in January 1913. North Island became the Army's first permanent aviation school. *(U.S. Air Force Museum)*

*The manufacturer, W. S. Burgess, was a renowned designer of yachts at Marblehead, Mass. He was the first manufacturer in the United States to be licensed by the Wright Company for use of its patents.



Wright Company Model B (shown) and Model C pusher-type aircraft were used in instructing pilots at the early Signal Corps aviation schools. The last Wright Company airplane sold to the Signal Corps was delivered in late May 1915 and dropped from the active inventory June 13, 1915. The machine was a Model B, the last production model of its type. Because of "hidebound determination to stick to the biplane pusher type" the Wright Company was unable to compete to any degree in the military aviation field. *(U.S. Air Force Museum)*

California. "Year-round" flying conditions in southern California were a major, but not the sole, inducement for the transfer. The new site marked the Army's "first permanent aviation school, organized on a solid basis and providing a logical and efficient course of instruction sufficiently comprehensive in its scope to justify its graduates being rated military aviators."[4] By mid-year the West Coast school had 7 airplanes, 3 instructors (including the commandant), 14 officer students, and 48 enlisted men assigned to service and support jobs.

In addition, the military aviation program during 1913 reached the point where it was formally recognized for its potential as part of a field force. The Army prescribed a model organizational structure for a provisional aero squadron. The tables of organization, equipment, and allowances called for 20 officers, 90 enlisted men, 8 airplanes, and 6 motorcycles for each squadron.[5] Available resources were growing and by the end of the year Army aviation more than equalled the strength of one squadron, with 15 airplanes and 114 commissioned and enlisted personnel, including 11 qualified pilots* and 9 other officers in pilot training.[6]

Certainly much progress had been made since 1908, but the price had often been measured in terms of sacrifice. From 1908 through 1913 military airplane crashes cost the lives of 12 officers, including 1 non-commissioned officer. Most of these fatalities had involved pusher-type airplanes. When seven of the fatal accidents occurred in 1913, and three of these involved Wright Model C pusher airplanes, pilots' confidence in that type of aircraft was destroyed. On February 16, 1914, pushers were grounded for further investigation. In effect, this action eliminated the Wright fleet, for a board of pilots recommended student training at North Island be limited to the tractor-type airplanes in the fleet, including one Curtiss and four Burgess airplanes.

Progress continued. According to Brig. Gen. Frank P. Lahm, the "Army's wings . . . received official sanction" on July 18, 1914, when Congress created an Aviation Section within the Signal Corps. The new Aviation Section inherited the general mission of the antecedent Aeronautical Division and in addition received the specific responsibility of "training officers and enlisted men in matters pertaining to military aviation."

Despite this recognition, American military aviation was still in its formative stages at the outbreak of the Great War in Europe on July 28, 1914. U.S. strength did not compare well to the pre-war strengths of the major European powers, in money or in resources allocated. Germany's pre-war budget reached $45 million, Russia's totalled $22.5 million, France allocated $12 million, Austria-Hungary allocated $3 million, Great Britain budgeted slightly more than $1 million, and Italy set aside $800,000. Germany had 2,600 men in uniform flying and/or supporting a fleet of 260 airplanes. France had 3,000 military personnel and 156 airplanes. Great Britain had 154 airplanes. In stark contrast, the United States Army Aviation Section's Fiscal Year 1915 appropriation was $250,000. Assigned personnel totalled 208, and aircraft inventory was 23 machines.

By March 1916 the clamor from an aroused American public stirred Congress to action. Its fervor was fueled by the embarrassing experience of the 1st Aero Squadron during the Spring of 1916 as the air element of the Punitive Expedition against Pancho Villa on the Mexican Border. Bowing to public opinion, in March 1916 Congress passed

* Among the certified pilots were two enlisted men: Sergeant (E-4) Vernon N. Burge who received his wings in August 1912, and Corporal (E-3) William A. Lamkey, who graduated in November of that year.

(U.S. Air Force Museum)

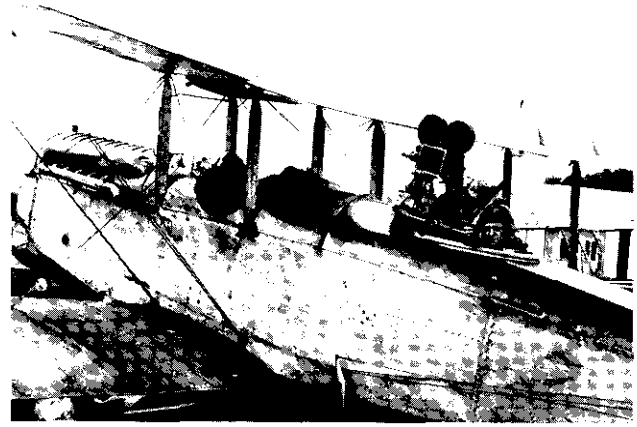
MAJ. GEN. GEORGE O. SQUIER

Maj. Gen. George O. Squier served as Chief Signal Officer, U.S. Army, from 1917 to 1923. A native of Michigan, Squier graduated from the U.S. Military Academy in 1887, and was commissioned as a lieutenant of Field Artillery. He later transferred to the Signal Corps. General Squier was one of the few Army officers to earn a Ph.D. after graduating from West Point, and distinguished himself in the fields of electrical science and radio. General Squier retired in 1923.

a deficiency appropriation that provided another $500,000 for military aeronautics. The National Defense Act of June 3, 1916, increased active duty officer strength in the Aviation Section to 148 and established a Signal Corps Reserve (of 297 officers and 2,000 enlisted men) for the Aviation Section.

At about the same time, a significant and beneficial action placed Lt. Col. George O. Squier as Officer in Charge of the Aviation Section.* Having just returned from four years as a military attaché to the U.S. Ambassador to Great Britain, Colonel Squier's observations concerning the "simply prodigious flying movement abroad" carried considerable weight with Congressmen.

On the strength of his testimony and that of other experts, Congress on August 29, 1916, appropriated $13,881,666 for military aviation and made a supplemental appropriation of $600,000 for the purchase of land to use as flying fields and depots. A massive search was undertaken nationwide to find suitable sites.



This DH-4 observation airplane, produced by the Dayton-Wright Airplane Company in 1918, was one of the first American-manufactured airplanes equipped for aerial photography. The motion picture camera was mounted on the aerial machine gun ring in the rear cockpit. *(Wright State University Archives)*

COMBAT-ORIENTED PILOT TRAINING

Two additional problems of major proportion confronted the Aviation Section near the eve of the United States entry into World War I: acquiring and training pilots. On February 3, 1917, when diplomatic relations with Germany were severed, none of the 132 planes on hand, nor the 293 on order, was designed for combat. No American Army pilot had ever flown a combat mission.

To compound the problem of unpreparedness, according to one historian, "the Aviation Section had no accurate knowledge of the equipment of a military airplane." No aircraft, for example, had ever been mounted with a machine gun. Aviation personnel had "practically no knowledge of radiotelegraphy and telephony, photography, bombing equipment, lights for night flying, aviators' clothing, compasses used in flying, or other aviation instruments" that were well known to European military pilots.[7]

Until 1916 the Army's flying training school at San Diego, California, had graduated a sufficient number of pilots for the small fleet. But with increased appropriations and the likelihood of the nation entering the conflict in Europe, there was an obvious need to expand the flying training program. By the end of February 1917, four additional pilot training schools had been established: at Mineola, Long Island, New York; at Ashburn Field, Chicago, Illinois; at Memphis, Tennessee; and at Essington, Pennsylvania.**

When the United States, on April 6, 1917, declared war on Germany, the Aviation Section had 132 airplanes deployed among the Signal Corps Aviation Schools (SCAS) and the 1st, 2nd, and 3rd Aero Squadrons.[8] Total strength included 131 officers, nearly all of whom were pilots or

*Less than a year later, Squier was promoted to brigadier general and appointed Chief Signal Officer (February 14, 1917).

**In addition, in November 1916 an ambitious program was begun to train civilian pilots in the Signal Enlisted Reserve Corps (SERC). Training began at the Curtiss Corporation School of Aviation in Newport News, Virginia, and expanded in December to another Curtiss school at Miami, Florida. By the end of the program in June 1917, Curtiss had trained 131 enlisted reservists.

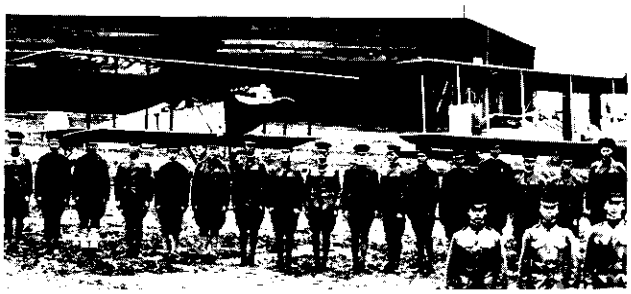
student pilots, and 1,087 enlisted men. As mentioned, none of the airplanes was combat-ready and none of the pilots combat-trained. Drastic measures would certainly be needed if America were to meet French Premier Alexandre Ribot's most urgent request for 4,500 airplanes, 5,000 pilots, and 50,000 airplane mechanics to be in his country by the first part of 1918.[9]

A gigantic wave of patriotic fervor engulfed America's national defense establishment, especially the Aviation Section. Hyperbole replaced rationality. Editorials in the nation's most influential newspapers demanded an almost immediate air fleet financed by real appropriations. Maj. Gen. George O. Squier, Chief Signal Officer, in his support of a proposed $600 million appropriation bill for the Aviation Section, talked eloquently about "an army in the air, regiments and brigades of winged cavalry mounted on gas-driven flying horses."[10] Not quite as flowery, but even more of an exaggeration, was the prophecy of Dr. James S. Ames, an eminent scientist, that Germany would be defeated "within a few months of the completion of the 22,625 planes called for in the $639,000,000 programme, which it was estimated could be turned out at the rate of 3,500 [airplanes] a month."[11]

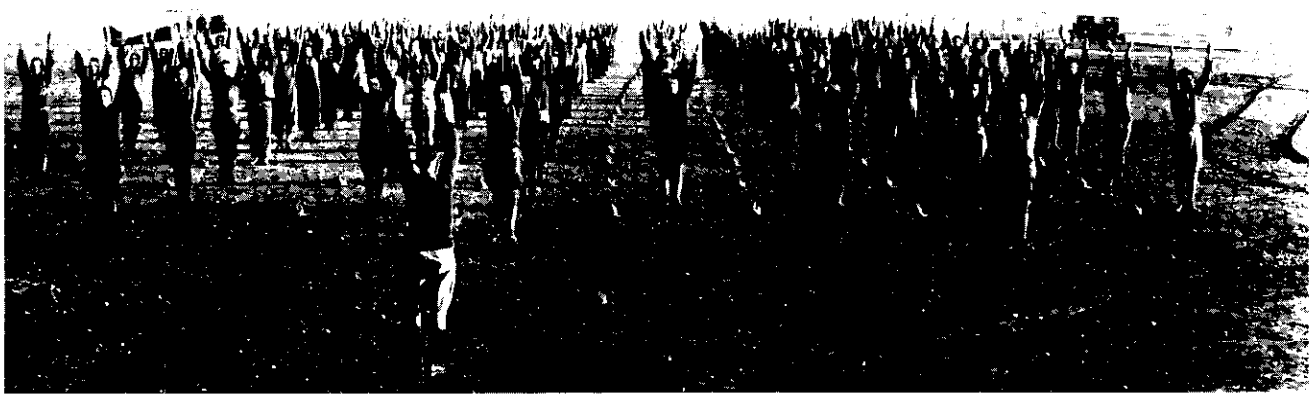
To accomplish an "aeronautical miracle," President Woodrow Wilson signed an aviation act on July 24, 1917, that provided the Signal Corps with $640 million. It was the largest single military appropriation in the nation's history. Although the end results were not as spectacular as had been envisioned, this program gave military aeronautics a permanent and major role in national defense.

Meanwhile, the Aviation Section turned to its British, Canadian, French, and Italian counterparts for direction in establishing and implementing personnel training and aircraft production programs. For example, the British-Canadian system of training flying cadets was adopted. Ground or pre-flight schools were established at six leading American universities, including The Ohio State University. The 400-hour intensified curriculum prepared 150 men every eight weeks for admission into primary flying schools. The curriculum included classroom instruction and static demonstration in the theory and principles of flight, aerial photography and reconnaissance, communications codes, meteorology, aircraft engines and airplane structures, aircraft instruments and compasses, and aerial combat tactics. These classes, according to a World War I pilot, were of "greatest value in acclimating the men in aviation and in supplying the all-important theoretical knowledge before actual flying began."[12]

After graduating from ground schools, cadets moved to Signal Corps Aviation Schools for actual flying instruction.* This primary instruction lasted a period of six to eight weeks. The actual time between the initial familiarization flight with an instructor and graduation as a Reserve Military Aviator (RMA) with the commission of second lieutenant depended on the student's progress. The curriculum covered three stages of flying and nearly 300 hours of classroom instruction in diversified subjects such as aircraft engines and structures, aerial machine guns, photographic interpretation, close-order drill, etc. The three phases of actual flying involved dual work with an instructor (4 to 9 hours), solo flying (24 flying hours total), and cross-country flying. From the very beginning "the training . . . was prescribed with the utmost care, leaving just as little to chance as humanly possible. . . . Step-by-step the cadet went on, always held back until he was doubly skilled in the



Young cadets, such as these at North Island, graduated from Signal Corps Aviation Schools as Reserve Military Aviators (RMAs) and were commissioned as second lieutenants. *(U.S. Air Force Museum)*



Morning calisthenics by flying cadets at the Wilbur Wright Field Signal Corps Aviation School, autumn 1917. At right are airplane hangars which housed the Curtiss Aeroplane Company JN-4D Jenny and Standard Aircraft Company SJ-1 biplane trainers used by the cadets in primary flight training. *(U.S. Air Force Museum)*

*Wilbur Wright Field was one of the first of these to be established.

present phase and doubly eager for the next."[13] The two-part final examination was a solo 60-mile cross-country flight and an altitude test of 10,000 feet.

After primary flying training, students transferred to one of three other installations for advanced work. At these installations the pilot specialized in pursuit, bomber, or "army-corps" flying. The last type was reconnaissance flying in which the pilot "traveled about with the aerial observers in search of information and photographs—only occasionally in battle."[14]

A final stage of training was labeled post-advanced or pre-combat. This training was done in England, France, and Italy where combat-type airplanes and battle-experienced tutors were available.

Between July 1917 and June 1918 more than 38,000 of the "finest of America's youth" volunteered for flying training with the Aviation Section. These young men were captivated by the gallant exploits of aerial knights mounting their winged steeds into cloudless skies where they would win immortal fame and glory high above the blood-drenched trenches and filthy shell-pocked no-man's land between the serpentine lines. "Constant reports of deaths of famous aviators abroad were far outbalanced by the romance of the [air] service and the opportunities for individuality."[15]

Patriotism and enthusiasm were laudable motivators, but more than a willing spirit was required. Strict physical and psychological standards eliminated 18,004 of the 38,770 candidates. Not the slightest defect was permitted in the structure and function of a candidate's cardio-respiratory system, eyes, ears, nose, throat, and other organs. Moreover, according to War Department criteria:[16]

> The candidate should be naturally athletic and have a reputation for reliability, punctuality and honesty. He should have a cool head in emergencies, good eye for distance, keen ear for familiar sounds, steady hand and solid body with plenty of reserve. He should be quick-witted, highly intelligent and tractable. Immature, high strung, overconfident, impatient candidates not desired.

Because the curriculum was exacting in technical studies, mathematics, and the sciences, the majority of flying cadets were either college graduates or undergraduates with majors in fields transferrable to aviation.

DAYTON AS A FOCUS OF AIRPLANE PRODUCTION

The Wright brothers' aeronautical achievements, the Wright Exhibition Company's aerial demonstrations, and the Wright Aviation Company's manufacturing and training operations imprinted on the community of Dayton, Ohio, a permanent interest in aviation, both civilian and military. As war clouds increased on the nation's horizon during 1914-1916, Dayton's business leaders became increasingly attuned to the economic potentialities of a greatly expanded and more powerful military aviation program. When war was declared in 1917, a group of Miami Valley industrial captains, endowed with foresight and armed with clout in political and financial circles, took action on Dayton's behalf.

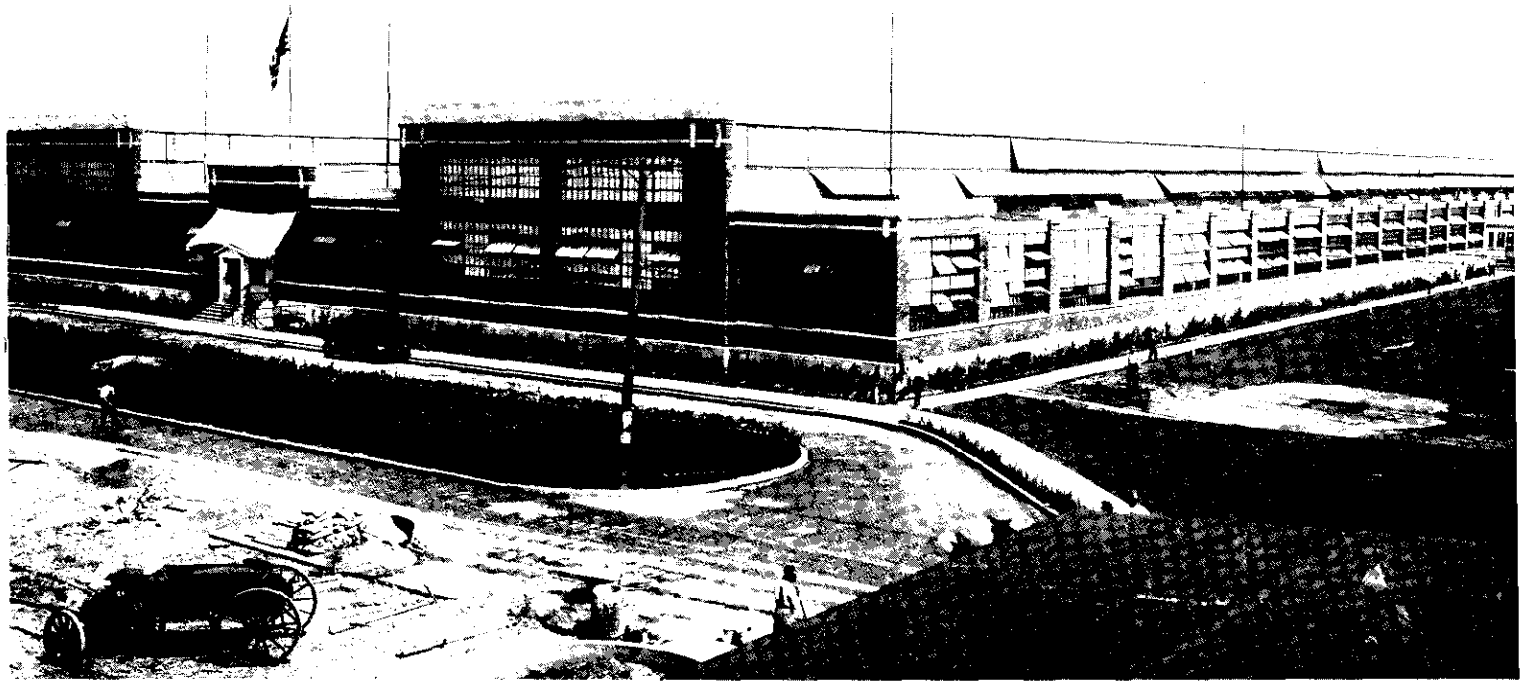
Less than a week after the United States entered World War I, the Dayton-Wright Airplane Company was organized.* The impetus for the new company had been generated in a meeting between Secretary of War Newton D. Baker and Ohio Governor James M. Cox on the subject of the national need for increased airplane production.[17] Governor Cox, a Dayton newspaper mogul and financier, was well acquainted with another talented Dayton industrialist, Edward A. Deeds. Deeds had achieved national renown as an industrialist of good reputation, integrity, and more than a little patriotism. He was currently serving as a member of the U.S. Munitions Standards Board in Washington.** As such, he could have no part in the actual ownership or management of the Dayton-Wright Airplane Company. He could, however, lend his expertise in the form of advice and counsel in setting the enterprise on a sound footing.

The new company located at Moraine City, south of Dayton, and began manufacturing DeHavilland DH-4 two-place biplanes.[18] Under license from the Curtiss Company, it also produced JN-4 two-place Jenny trainers. By the end of 1918 the Dayton-Wright Airplane Company had manufactured about 3,100 of the total 4,500 DeHavilland DH-4s built in the United States, and 400 JN-4 Jennys.

The Dayton-Wright Company, Moraine City, produced nearly three-fourths of the more than 4,500 British-designed DH-4 airplanes manufactured in the United States during 1917-1918. These airplanes were equipped with American-designed and built Liberty 8-cylinder and 12-cylinder engines. *(NCR Corporation)*

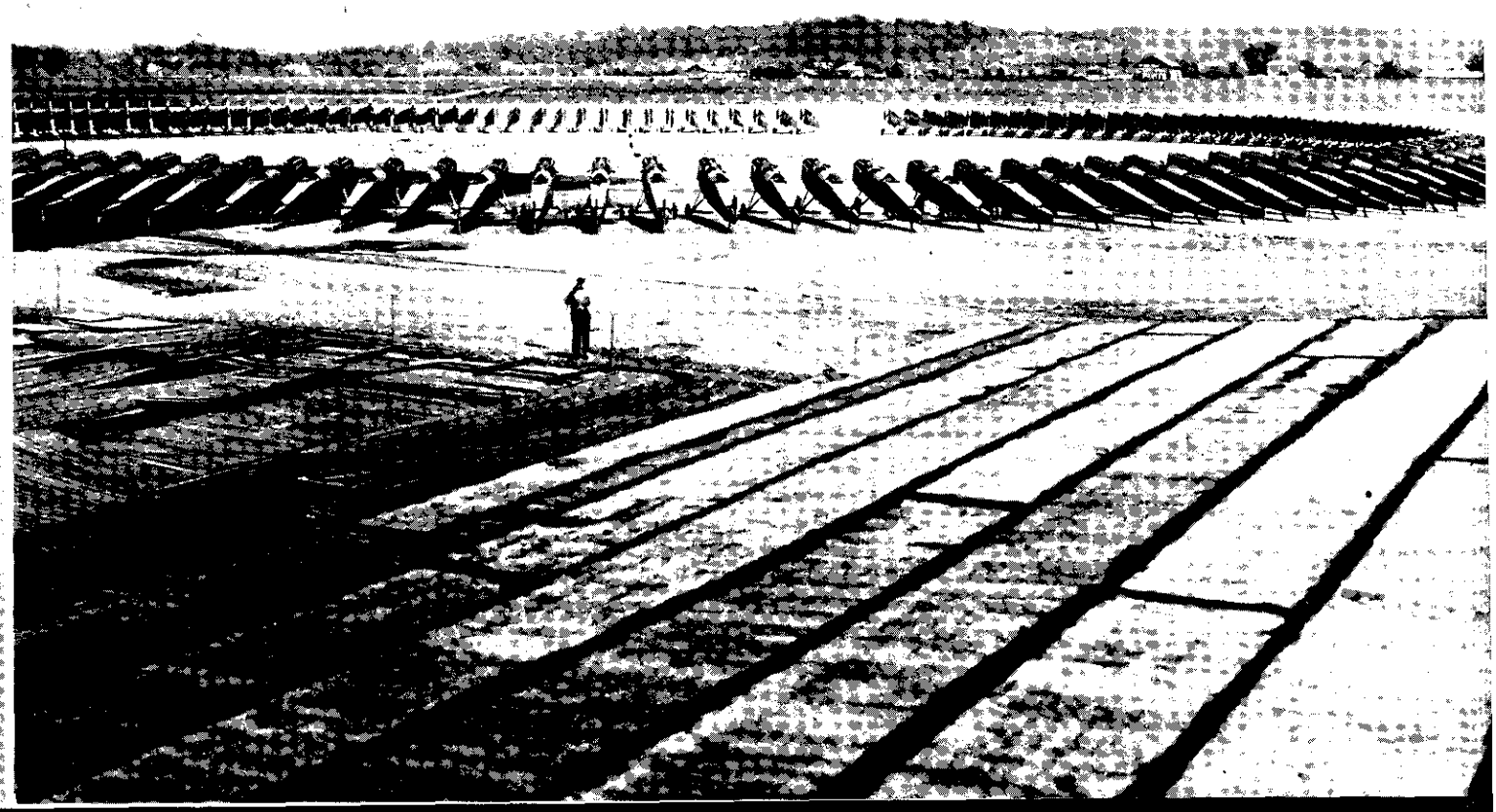
*Board members were Harold E. Talbott, Sr. and Harold E. Talbott, Jr. (who later served as Secretary of the Air Force from February 4, 1953 to August 13, 1955), Charles F. Kettering, Thomas P. Gaddis, George Mead, Carl Sherer, and G. M. Williams. Orville Wright served as a director and as a consulting engineer.

**Deeds was subsequently commissioned as a colonel in the Signal Corps Reserve. He served as a member of the Aircraft Production Board and as Chief of the Signal Corps Equipment Division during World War I. For further details on his contributions to military aviation, see Chapter IV, McCook Field.



Headquarters and principal plant of the Dayton-Wright Airplane Company located in what is now Moraine City, south of Dayton, Ohio, as it appeared in June 1918. Organized in April 1917, the company produced about 3,100 British-designed DH-4s and 400 Curtiss JN-4D Jenny trainers during 1917 and 1918. *(Wright State University Archives, Wright Brothers Collection)*

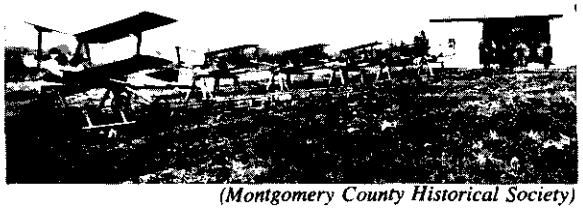
Fuselages of DeHavilland DH-4 airplanes await their wings at the Dayton-Wright Airplane Company, August 24, 1918.



(Montgomery County Historical Society)

KETTERING "BUG"

While the Dayton-Wright Company manufactured airplanes, one of the company's more inventive board members, Dayton genius Charles F. Kettering, was also designing and building the world's first "guided missile," the Kettering Aerial Torpedo, nicknamed the "Bug." The tiny, 300-lb papier-mâché airplane with 12-foot cardboard wings, could carry 300 lbs of explosives at 50 mph. Total cost was about $400, including a $50, 2-cycle, 40-hp engine. The flying bombs were launched from a rail pointed precisely in the direction of the target. Distance, wind direction and speed, and engine revolutions per minute were figured into calculations that resulted in the small airplane's folding its wings and plunging to earth squarely on target. The flying bomb was first tested on October 2, 1918, but was not used in World War I.



(Montgomery County Historical Society)

ESTABLISHMENT OF WILBUR WRIGHT FIELD

In addition to localizing aircraft production, Edward Deeds was involved in other efforts on behalf of his Dayton community. One of the most significant of these was his role in the selection of a site on Huffman Prairie for use as a flying field and a Signal Corps Aviation School. The War Department named this installation Wilbur Wright Field.

Through personal contacts in the Aviation Section, Deeds was aware of contingency plans to establish new aviation schools when funds became available. The August 29, 1916, Congressional appropriation of $13 million for military aviation provided funds specifically to acquire land either through purchase or by lease.

The optimal situation sought was an area sufficiently large to accommodate four training squadrons. Deeds knew of such a possible site. It lay in the Mad River flood plain near the village of Fairfield in Greene County, Ohio, under the jurisdiction of the Miami Conservancy District, of which Deeds was president. The District was a political subdivision organized in 1915 and chartered by the state legislature for "building and maintaining flood control works in the Miami Valley." The District's mission was to prevent, by constructing five retarding dams, a recurrence of the conditions that led to the disastrous flood of March 1913. That catastrophe killed over 400 people in Dayton and the Miami Valley and caused over $100 million in damages.[19] The Mad River was a tributary of the Miami, and the site of one of the proposed dams. Huffman Prairie lay on its flood plain.

Mr. Deeds suggested to General Squier, Chief Signal Officer, that Huffman Prairie and vicinity might be suitable for an aviation school. The Ohioan pointed out that the Wright brothers had trained several dozen pilots at their Simms Station school in the same locale.

Consequently, Dayton was included in the Signal Corps survey of midwestern cities. On April 30, 1917, Maj. Benjamin D. Foulois of the Aviation Section and Lt. Col. C. G. Edgar, Commanding Officer of the Signal Corps Construction Department, arrived in Dayton. They were escorted by Mr. Deeds and Orville Wright on a tour of the area. Major Foulois was favorably impressed with the Huffman Prairie locale, describing it as "admirably suited for aviation purposes."[20] He had been advised that the Miami Conservancy District owned all the land, thus allowing the Signal Corps to negotiate with a sole owner for either lease or purchase of the whole parcel. In addition, Major Foulois reported, the acreage could be acquired "at a very low cost."

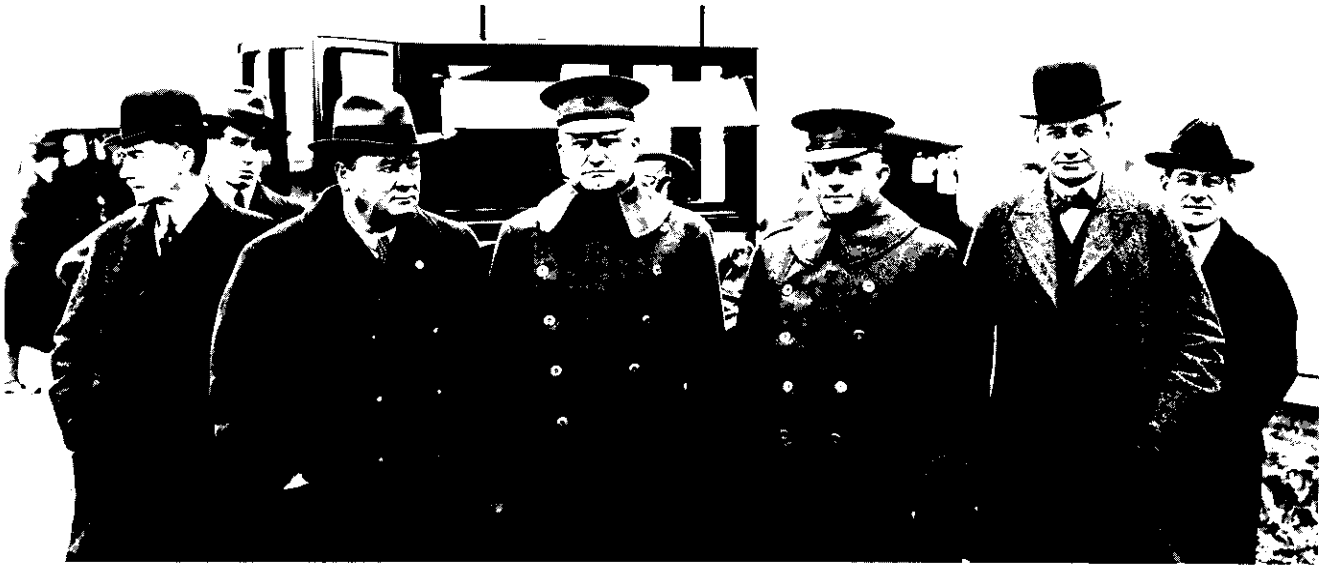
Cost aside, the selection of sites for new training schools was a difficult and "most delicate [political] matter, for . . . much pressure was exercised in favor of various localities, and great difficulty was experienced in making unbiased decisions."[21] Selections were therefore proposed by a board of officers for approval by the Chief Signal

On March 25, 1913, rising waters of the rampaging Miami, Mad, and Stillwater Rivers flooded 4th and Ludlow Streets and other areas of downtown Dayton, Ohio, to a depth of ten feet. The disaster claimed over 400 lives and caused more than $100 million in property damage. *(Montgomery County Historical Society)*

Five earthen dams were built by the Miami Conservancy District between 1918-1922 as part of a $35 million program designed to prevent a recurrence of the March 1913 flood in the Miami River Valley basin. Photo shows construction of Huffman Dam on the Mad River, Greene County, Ohio, March 15, 1922.

Officer and the Secretary of War. In the case of the Dayton site, General Squier recommended, on May 15, 1917, that Secretary of War Baker approve the rental with option to purchase about 2,500 acres, including Huffman Prairie and vicinity.

As a matter of fact, though, the Miami Conservancy District did not have title to the land. The District technically held options to purchase and could exercise the right of eminent domain as a last resort. It was generally easier and quicker to negotiate amicable settlements with property owners than to bring legal action against them, and in the situation at hand time was very short. Deeds sent urgent messages from his suite in the New Willard Hotel in Washington, D.C., to the austere Dayton offices of Ezra M. Kuhns, Secretary-Treasurer of the Conservancy District, to



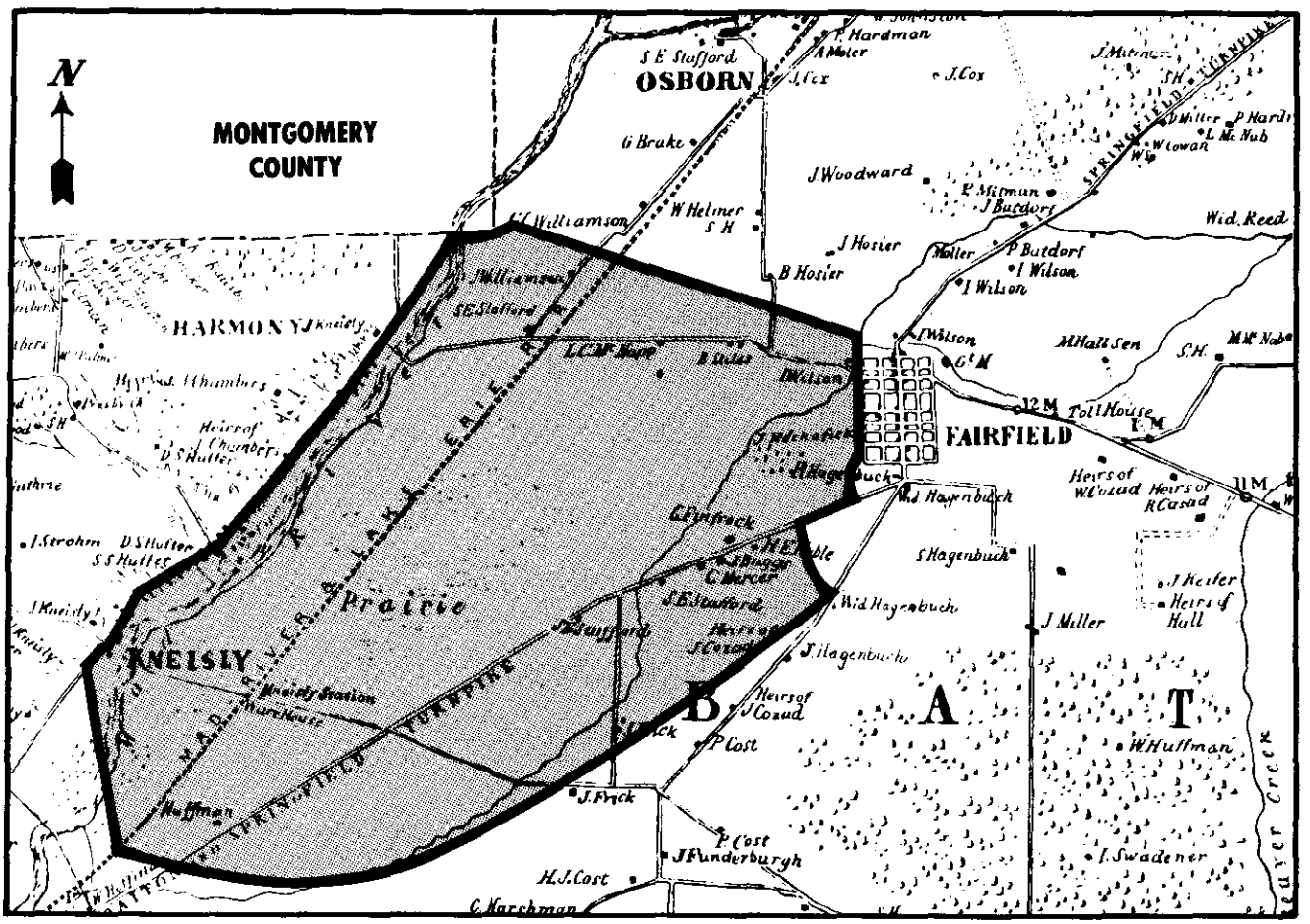
A distinguished committee visited Wilbur Wright Field in November 1917. Convened to present Orville Wright with the Royal Arts Society Medal, the committee consisted of (left to right): Col. Harry E. Talbott; Lord Northcliffe of the Royal Arts Society; Col. Edward A. Deeds, at the time a member of the Aircraft Production Board; Lt. Col. George M. Bomford, Commanding Officer, Wilbur Wright Field; Howard E. Coffin, Chairman of the Aircraft Production Board and member of the Board of Governors of the Aero Club of America; and Capt. C. W. C. Wheatley of the Royal Flying Corps. *(Christian Studios, William P. Mayfield Collection)*

expedite the District's purchase of the farms. To do so, two concessions were offered to the farmers/owners: an inflated purchase price and an agreement to allow the dispossessed families to remain in their homes until the end of the growing season or whenever construction required their removal. Prices paid reached a maximum of $40 per acre for wheat fields, $35 per acre for corn fields, $25 for oats and alfalfa fields, and $5 per acre for pasturage.[22]

On May 22, 1917, Lt. Col. C. G. Edgar as the Signal Corps agent, signed a short-term lease with the Miami Conservancy District for 2,075 acres of land between what is now Huffman Dam and the City of Fairborn at a rental of $20,000 for the initial period ending June 30, 1917. The United States agreed to pay $73,000 to the farmers for their crops. The agreement also contained the option for renewing the lease for one year beginning July 1, 1917, to cover 2,245.20 acres (including the original 2,075 acres) at a rental of $17,600. The United States had the option of renewing the lease for three years at a cost of $20,000 per annum. Another option allowed purchase of all the acreage for $350,000.[23]

On June 6, 1917, the Office of the Chief Signal Officer issued a memorandum stating that the "recently authorized aviation school" near Dayton, Ohio, would be known as Wilbur Wright Field, Fairfield, Ohio. Moreover, it was desired that this name be used in referring to the school itself.* The same memorandum named Signal Corps Aviation Schools at Selfridge Field, Mt. Clemens, Michigan; and Chanute Field, Rantoul, Illinois.[24]

Just as it had patterned flying instruction after Canadian and British flying schools, the Signal Corps Aviation Section modeled its aviation training fields according to Canadian design. Standard specifications for all SCAS sites were drawn from Canadian blueprints by a Detroit, Michigan, civilian architectural firm during a crash 10-day program and rushed to the various Construction Department on-site supervising officers. Wilbur Wright Field was programmed to be one of the four largest U.S. aviation schools, supporting four school squadrons and 24 hangars, 1,700 personnel (including 300 flying cadets), and up to 144 airplanes.



Map of Huffman Prairie and vicinity, Greene County, Ohio. Shaded area became Wilbur Wright Field in 1917.

*There has been controversy through the years as to the initial name of the installation. Although initial correspondence had referred to "Dayton Aviation Field" or the "former Wright flying field," official memorandums were clearly marked "Wilbur Wright Field." No documentary evidence has been found that officially named the Huffman Prairie-Simms Station area as "Wright Field" or "Wright Flying Field." When asked in 1982, neither Mrs. Ivonette Wright Miller nor Mr. Horace Wright, surviving niece and nephew of the Wright brothers, could recall that any such title was applied to the Huffman Prairie area prior to World War I.

FROM THE GROUND UP

On the strength of the May 22 interim lease signed by Colonel Edgar of the Construction Department, the job of converting a small civilian airfield on Huffman Prairie into a major military installation was begun. Wilbur Wright Field was intended as a two-unit, four-squadron flying field. Unit One was to be the Signal Corps Aviation School and was to be in operation by July 15, 1917. Unit Two was to function later as an Aviation Armorers' School.

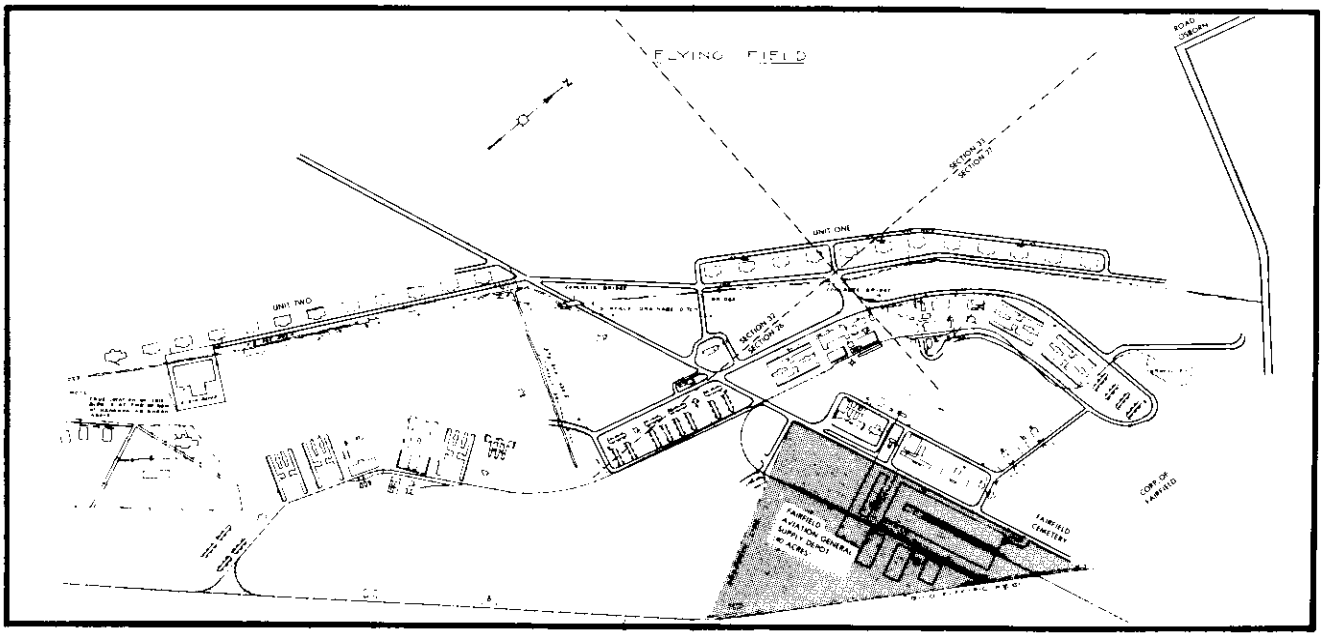
Capt. Charles T. Waring arrived on May 25 from Ashburn Field, Chicago, Illinois, to assume complete charge of the project. A contractors' work force of about 3,100 laborers, together with mules, horses, wheelbarrows, steam shovels, and other machinery, awaited him. Under the press of wartime conditions, this force labored 24 hours a day, each day in the week, to have the field ready for its first contingent of flying cadets scheduled to arrive from Ohio State University ground-training classrooms on July 15.

That the airfield was ready on schedule was almost a miracle according to a detailed report published one year later by the Commander of Wilbur Wright Field, Maj. Arthur E. Wilbourn.*

Wilbur Wright Field Commander's residence, 1917. To the immediate left are the hangars of the Signal Corps Aviation School. Now known as Building 88 (Area C), this former farmhouse continues to serve as a married officer's home on Wright-Patterson Air Force Base.

MAJ. ARTHUR E. WILBOURN

Maj. Arthur E. Wilbourn graduated from the U.S. Military Academy in the class of 1908. He was commissioned in the Cavalry and placed on special duty with the Signal Corps to command various flying fields during World War I. He commanded the Signal Corps Aviation School and Wilbur Wright Field, Fairfield, Ohio, from December 30, 1917, to June 28, 1918. He retired as a colonel in 1944.



Hangar line and major buildings constructed at Wilbur Wright Field during 1917 and 1918. Shaded area shows location of Fairfield Aviation General Supply Depot, created to supply Wilbur Wright Field and other flying installations.

*Major Wilbourn was not the initial Commander. He did not assume command of the Aviation School and Wilbur Wright Field until December 30, 1917. However, he authored an extensive "annual report" covering nearly the entire first year of the installation. Unless otherwise noted, all quotes in this chapter are drawn from this primary source.

Approximately 1,600 of Wilbur Wright Field's 2,075 acres were in low-lying bottom land along the Mad River. The flat area on the floor of the valley was three-quarters of a mile wide and stretched along two miles of the river shore. Elevation above the water level in the river varied from zero to two and one-half feet. Three-quarters of a mile from the river the land sloped gently upward, with the maximum elevation about 30 feet above the river level.[25]

Most of the field's buildings were constructed on the elevated portion of the site, while flying was done from the level land near the river. Twelve wooden hangars were assigned to each Unit and were, of necessity, located on the flightline. Each hangar measured 120 ft by 66 ft and could be configured for class instruction, or for maintenance or experimentation on up to six airplanes. The hangars bordered a large open drainage ditch that crossed the installation in a northeasterly direction. Thus flying operations were bounded on the south by the main drainage ditch and on the north by the Mad River.

During the first hectic period of construction, some attempts were made to grade the land for better drainage. Major Wilbourn, in retrospect, considered these efforts "highly unsatisfactory," pointing out that some places on the flying field were still "approximately on a level with the river." He believed the drainage problem could have been resolved had all the low places been graded so as to "drain into one or two centrally located reservoirs from which water could have been pumped into the river."

Apparently time constraints did not permit such measures, and "earth was simply hauled from the high points on the field and dumped into the low places." Aggravating the situation were holes and pits made by woodchucks, chipmunks, and other animals. Consequently, the field was precariously uneven for student pilots, and during each rain the countless small depressions in the swampy turf filled with water. (As noted in Chapter I, the Wright brothers had also complained about the rough and swampy terrain.)

The drainage problem was especially severe around the Unit Two hangars (known as the South Unit). Located at a particularly low spot between the flying field and the drainage ditch, they were directly in the path of what little natural drainage there was. Water from the flying field often ran around and through them, especially during storms.

By the middle part of 1918, about $50,000 had been spent in attempts to smooth the surface of the flying field to prevent landing accidents. Drainage was also improved in the area of the South Unit hangars, though little could be done about the overall problem.

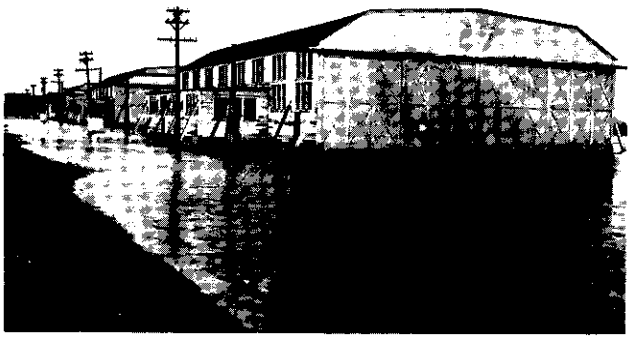
All roads within the new reservation were laid by the Construction Division. They were composed of a mixture of sand and gravel blended with tar. During the 1917-1918 winter, however, the roads proved to be "absolutely inefficient," and gravel sidewalks disappeared altogether. In his annual report, Major Wilbourn noted his efforts to rebuild the roads and sidewalks using screened gravel with a top covering of sand, resurfaced and rolled twice.

While the Army improved roadways inside the reservation, it was powerless to do much about off-base roads, which Major Wilbourn described as being in "horrible condition." Yet for many months Wilbur Wright Field had to rely almost entirely on its own motor transport for the hauling of all food, clothing, and supplies from Dayton and Springfield.

As bad as they were, the roads were less trouble than the railroad. The nearest steam railroad depot was at Osborn, three miles away.* Between the railroad and the Post ran an electric interurban line. It was deemed "very inefficient," since the tracks, overhead wires, and pole systems had caused fires and were in "poor condition to meet any increased demands." In addition, the company refused to carry less-than-carload shipments. Major Wilbourn noted that "since these shipments were urgently needed it was necessary to use post transportation to haul them."** State and county officials were not indifferent to the problem, however, and began work in 1918 to assure that good roads would be available to the installation at all times.

After the rapid pace of the first month, building slowed but did not stop. Between July 1917 and March 1918, cost of construction of the Signal Corps Aviation School and Wilbur Wright Field rose to $2,851,694, and a continuing series of control problems became evident.

The building program had been both massive and hurried; it was not surprising that Major Wilbourn found the quality of both materials and workmanship to be inferior. He based this judgment on the "excessive amount of time, labor and materials spent in [repairing] and maintaining the buildings at this Station from July 1, 1917, to May 31, 1918." He could find no record that the Army had ever accepted the erected buildings. Indeed, he commented that "it is not believed that any board could have accepted these



High water from the nearby Mad River flows around and through the Wilbur Wright Field hangars, May 12, 1918. Local flooding was common during the early history of the field. *(U.S. Air Force Museum)*

*Major Wilbourn makes various reference to Osborn being 1½ and 3 miles distant.

**Post transport at the time consisted of a fleet of 40 trucks, 8 touring cars (including 2 Cadillacs), 4 ambulances, 1 fire truck, and 20 motorcycles with sidecars.

MAJ. ARTHUR R. CHRISTIE

Maj. Arthur R. Christie served as the first Commanding Officer of Wilbur Wright Field, Fairfield, Ohio, arriving July 6, 1917, from Ashburn Field, Chicago, Illinois. Major Christie made the first test flight from Wilbur Wright Field on July 17, 1917. He served as Commander until September 26, 1917. Christie rose to the rank of lieutenant colonel and served as Chief of Air Service, V Corps, in the St. Mihiel offensive, during World War I.

MAJ. LEO G. HEFFERNAN

Maj. Leo G. Heffernan, U.S. Military Academy Class of 1911, was commissioned as a second lieutenant in the Cavalry. He later transferred to the Air Service and completed pilot training in September 1916. In grade of captain and as Commanding Officer, he led the 152-man 12th Aero Squadron from Kelly Field, Texas, to Wilbur Wright Field on July 8, 1917, the first organization to arrive at the new installation. In the grade of major he commanded Wilbur Wright Field from December 19 to 24, 1917. He later served as an Air Service officer with the American Expeditionary Forces (AEF) in France. Heffernan retired on disability as a major in 1933.

Military strength increased dramatically in August, both in number and in capacities represented. Among those added were members of Cadet Squadron A and the three officers and 137 enlisted men of Company K, 3rd Ohio National Guard infantry, which had been called into federal service with the National Army. By the end of August, total strength of Wilbur Wright Field had risen to 38 officers and 1,579 enlisted men. (Within a year, the monthly total would exceed 3,000.)

Despite the influx of personnel, preparation for the field's main function continued apace. In early July, several Standard SJ-1 biplane trainers were shipped to the site in freight cars, reassembled, and readied for use. On July 17, facility commander Major Christie was able to make the installation's first test flight, officially launching the military aviation history which continues today at Wright-Patterson Air Force Base.

During the first six months of operations, from mid-July to mid-December, an average of 160 students per month were enrolled in the Aviation School. Eighty-two of these were graduated with the rating of Reserve Military Aviator (RMA) and received commissions as second lieutenants in the Reserve Corps. Surviving records indicate only five discharges, and almost two hundred students continued on to other stages of training at Wilbur Wright or other installations. This record stands as an eloquent testimonial to the dedication, perseverance, and professionalism of the Wilbur Wright Field population, both military and civilian. (A significant portion of the staff were civilians employed as flying instructors, aeronautical engineers, airplane mechanics, and housekeeping craftsmen.)

Railroad depot at Osborn, Ohio, where soldiers bound for Wilbur Wright Field disembarked and began their dusty march to the new installation.

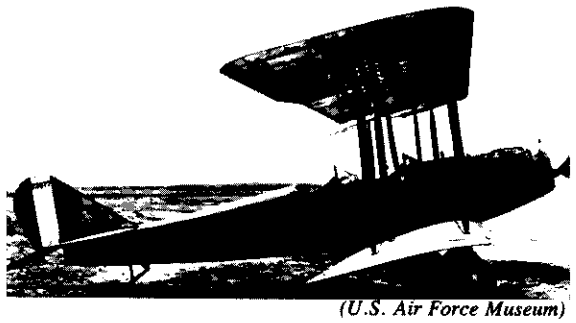
(U.S. Air Force Museum)

THE FAMOUS BIPLANE TRAINERS

Many pilots who served so gallantly and flew so courageously with the Air Service, American Expeditionary Forces (AEF) in France during World War I received their primary flight training at Wilbur Wright Field. The biplane trainers most frequently used were the Curtiss JN-4D Jenny and the Standard SJ-1. These single-engine airplanes featured two open cockpits in tandem, and fabric-covered fuselages and wings.

	Curtiss JN-4D	Standard SJ-1
Wingspan	43ft 7in	43ft 10in
Length	27ft 4in	26ft 4in
Engine	90-hp, 4-cylinder Curtiss OX-5	100-hp, 4-cylinder Hall-Scott A-4/A-4A
Weight	1,430 lbs	1,350 lbs
Top Speed	75 mph	72 mph
Cost	$5,465	$6,000

Sources: Air Force Pamphlet 70-7, *U.S. Air Force Historical Aircraft, Background Information*, June 1970; letter, Mr. E. E. Pennewill, Vice-President and General Manager, Standard Aircraft Corp. of Elizabeth, New Jersey, to Dept. Military Aeronautics, Technical Section, Dayton, Ohio, subj: Performance of Airplanes, September 7, 1918.



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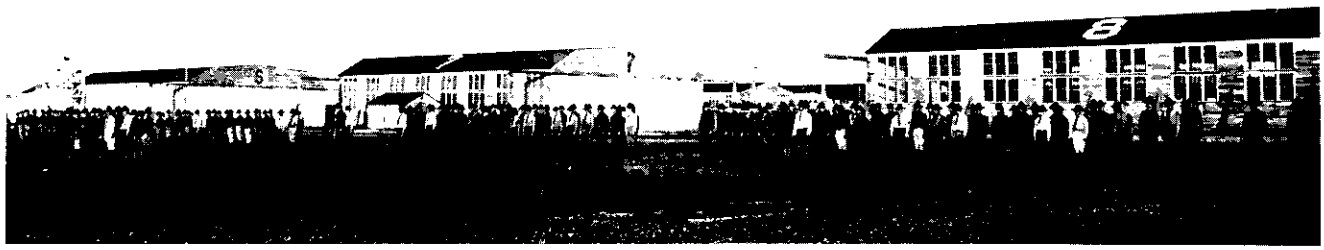


Signal Corps Aviation School flying cadets stand roll call behind Wilbur Wright Field hangars, spring 1918.

Taken from an airplane in flight near Simms Station, this photograph shows a train en route from Osborn to Dayton, the Yellow Springs Pike covered bridge crossing the Mad River, and the abandoned mill at Simms Station. The Simms family 20-room home is at center, partially obscured by trees. *(Bob and Dottie Gheen)*

THE VILLAGES OF FAIRFIELD AND OSBORN, OHIO

By Dottie Grey Gheen

The creation of Wilbur Wright Field and the Fairfield Aviation General Supply Depot had a significant impact on the surrounding communities in Bath Township, Greene County, Ohio. Most directly affected were the nearby villages of Fairfield and Osborn.

Although the depot and the training schools brought new activities to the area, the concept of aviation was not new to the people of Fairfield and Osborn. Both towns were within two miles of Simms Station, where the Wright brothers had conducted their flying experiments in 1904-1905 and operated an aviation school from 1910-1916.

Simms Station was a stop on the Mad River and Lake Erie Railroad, and consisted of a warehouse-depot building, probably accompanied by a water tower. It was also a well-known local landmark. The 1855 Greene County Atlas listed it as Kneisly Station. Mr. John Kneisly owned over 1,200 acres of land in the fertile valley, and both the depot and a tiny hamlet one mile to the west on the banks of the Mad River carried his name. Following local custom, when Mr. W. A. Simms later purchased the land, the small depot became known as Simms Station.

According to firsthand accounts, the Wright brothers' flights near Simms Station became spectator events for the citizens of Fairfield and Osborn. They frequently made the short ride to Simms Station, and could even rent camp stools from an enterprising area celery farmer. Local enthusiasm for aeronautics was also undoubtedly fired by the inventiveness and determination of Mr. Charles Snyder, an Osborn inventor and flyer, who designed and built seven airplanes of his own in the years between 1905 and 1917. Residents of both Fairfield and Osborn were known to be incurably air-minded from the earliest years of the century.

The village of Fairfield dated from 1816, and stood at the crossroads of four major "pikes." By 1855, Fairfield had a population of 400 and was a well-known stop on the stage coach route. Because the town refused to allow railroads to pass through it, growth stopped in the late 1800s with the disappearance of the stage coaches.

Around 1900, Fairfield gladly allowed the new Dayton-Springfield-Urbana electric interurban rail line to pass through the center of town. It was not until World War I and the construction of Wilbur Wright Field and the adjacent depot installation, however, that the town witnessed significant growth.

The village of Osborn, located two miles north of Fairfield, dated from 1851 and was named for Mr. E. F. Osborn, a local railway superintendent. By 1874, according to the Greene County Atlas, Osborn counted 700 residents, the largest town in Bath Township. By 1900, two railroads and the electric interurban serviced Osborn, and the town boasted three mills, a buggy whip factory, an egg case factory, two banks, four churches, and its own water and electric plants.

The 1913 Miami Valley flood, however, changed the course of Osborn history. The flood itself did limited damage to Osborn, but it devastated Dayton and communities to the south. Within two years, the Miami Conservancy District was formed to prevent a recurrence of the disaster, and consequently proposed that five earthen dams be built, including one across the Mad River just south of Osborn.

Intersection of Dayton Street and Xenia Pike in Fairfield, about 1900. Today, Broad Street and Xenia Drive in Fairborn intersect at this location. *(Bob and Dottie Gheen)*

Exercising the right of eminent domain, by 1919 the Conservancy District had purchased all of the land in the flood plain above the proposed dam, including the entire town of Osborn. The railroads and interurban line relocated, the three mills closed, and newspaper headlines of the day proclaimed that "THE TOWN OF OSBORN [WAS] DOOMED." These gloomy predictions failed to take into account the spirit of Osborn residents unwilling to see their town die.

Without financial help from any government agency, the people of Osborn conceived, formed, and financed The Osborn Removal Company. The Removal Company bought back all the buildings in Osborn from the Conservancy District, and purchased a new site for them in a pocket of land bounded by the relocated railroad, the interurban line, and Hebble Creek, adjacent to the village of Fairfield. Over a period of three years, Osborn citizens moved their entire town—approximately 400 buildings—to the new location. The planning, engineering, and financing involved in the project were unprecedented in the nation, and the unfolding effort was reported in national newsreels and magazines.

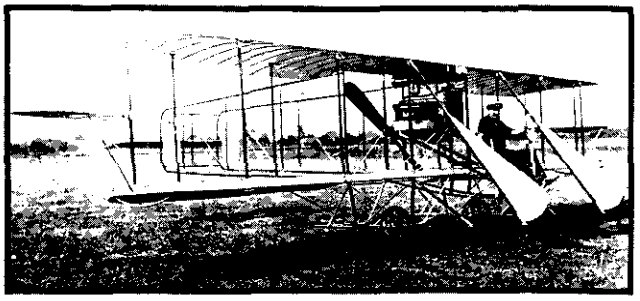
Meanwhile, America entered World War I, and Fairfield and Osborn soon had new military neighbors. A relationship of cooperation and mutual support developed between the military posts and the two towns. The villages supplied workers, horses, machinery, and supplies to help construct the new flying school and depot. In the years following the war, it was common for officers stationed at the installations to make their homes off base and to play active roles in community affairs. Military families of both installations sent their children to local schools and attended local churches.

On the other hand, the military bases provided employment. Throughout the 1920s and 1930s, the work forces at Wilbur Wright Field and the Fairfield depot (and later Wright and Patterson Fields) were predominantly comprised of civil service employees, furnishing hundreds of local families with weekly paychecks.

Early newspapers such as the *Bath Township Herald and Mad River Valley Journal* and the *Wilbur Wright Exhaust* documented the close relationship that existed between the military and civilian communities. A regular column in the Herald was devoted to activities at Wilbur Wright Field, and the society column covered the social doings of both on-base and community citizens. Local residents attended dances, movies, and other activities on base, and formed a wide range of organizations and clubs.

During World War II, as the base grew, so did the surrounding communities. Combined civil service employment for both Wright Field and Patterson Field soared to nearly 50,000 at the height of the war. Local communities faced the challenge of providing housing and services for the ballooning work force, and local companies, such as the two cement plants, supplied increasing amounts of business and construction materials.

By the end of World War II, the identities of the small villages of Fairfield and Osborn had largely disappeared, and a much larger, forward-looking community stood in their stead. As a sign of the future, on January 1, 1950, the towns of Fairfield and Osborn officially merged to form the City of Fairborn, Ohio, Wright-Patterson's present-day partner in progress.



Local sources indicate that Mr. Charles Snyder of Osborn, Ohio, designed and built seven airplanes of his own invention in the years between 1905 and 1917. He incorporated the Snyder Aeroplane Company in 1911. One airplane was produced, but Mr. Snyder's inability to collect payment from the buyer caused the company to fail financially. Mr. Snyder is pictured here about 1910. Each of his airplanes incorporated a control wheel, a single direct-drive propeller, and landing wheels with brakes. *(Bob and Dottie Gheen)*

Balloon enthusiasts Fred Woodall of Dayton and Mr. McGill, an Osborn newspaperman, made double parachute drops from balloons as early as 1910. This sensational livelihood netted them as much as $500 per drop when business was good. This drop was made over downtown Osborn in 1911. *(A. F. Woodall, former Wright Field employee)*

Business district of old Osborn, about 1920 *(Bob and Dottie Gheen)*

The Osborn Removal Company was formed to move the old town of Osborn to its new location adjacent to the village of Fairfield. Approximately 200 houses and another 200 outbuildings were moved between 1922 and 1925. Here a home is being transferred onto its new foundation. *(Bob and Dottie Gheen)*

The overall effort of the "flying instruction department" was one of the few functions praised in Major Wilbourn's annual report. This sense of purpose was the real legacy of Huffman Prairie and has remained the heritage of each succeeding installation.

The flying instruction was carried out in two basic aircraft at Wilbur Wright Field and other Signal Corps Aviation Schools. These were the Curtiss Aeroplane Company's JN-4D Jenny, powered by the 90-hp Curtiss OX-5 engine, and the Standard Aircraft Corporation's SJ-1, powered by 100-hp Hall-Scott A-7 and A-7A engines. Both were single-engine biplane trainers, with two open cockpits mounted in tandem.

The Jenny evolved through the cross-breeding of an English aircraft designed by B. D. Thomas, known as Model J, with a Glenn Curtiss American design, Model N. The offspring was naturally christened "JN." The most common model of the series was the JN-4D.

The Jenny was much easier to fly than the SJ-1, and therefore saw heavier use (6,000 JN-4Ds were built by the end of 1918, as opposed to 1,601 SJ-1s). According to one historian, about 90 percent of all World War I American pilots earned their wings in this airplane. After the war ended, hundreds of these Jennys became the mainstay "barnstormer" of the 1920s. Dozens of the airplanes were still being flown in the 1930s from pastures, fairgrounds, race tracks, and other flat (but not necessarily smooth) surfaces. Many a World War II pilot got his first taste of flying as a youngster with a five-minute flight for one dollar in a Jenny that circled a local pasture at minimum altitude.

Although he praised the instructional aspects of the flying program, Major Wilbourn found that the condition of the associated records varied from haphazard to disastrous. Two weeks after the flying season ended for the year, he was unable to determine how many airplanes had been assigned on station since July or how much logistical support had been provided. The records of the Supply Department were "in a most chaotic condition" and the accounts of the Engineering Division, which he described as providing the "whole fabric of maintenance and operation of the field," were incomplete. Fortunately, enough records had been maintained to indicate the amount of flight instruction which had been given and supported during that first season. This information is summarized in the accompanying table. In total, the SCAS graduated 82 RMAs and logged 5,298 hours and 27 minutes of flight time with the loss of only 17 aircraft. At least 85 JN-4Ds and 32 SJ-1s arrived on station, and 46 Curtiss and 32 Standards were subsequently shipped to other primary bases.

Airplane gasoline consumption was 88,036 gallons; oil usage was 1,900 gallons. Operating expenses totalled $310,000 including local purchases of aviation gasoline and oil, machinery, tools, airplane spare parts, office supplies and equipment, and other items.

On December 1, the Signal Corps Aviation Section directed that flying instruction activities be transferred from Wilbur Wright Field to more "Southern stations" for the duration of the 1917-1918 winter.[27] Five of these primary training fields in the "sunshine belt" were located in Texas (Barron, Carruthers, Kelly, Love, and Taliaferro), and others were scattered through Arkansas, Tennessee, Georgia, and Alabama.[28]

By December 15, all flying activity ceased. In place of training pilots, the Wilbur Wright Field facilities were pre-

WILBUR WRIGHT FIELD SIGNAL CORPS AVIATION SCHOOL

Flying Season 1917	JUL	AUG	SEP	OCT	NOV	DEC
Total Instructors, Military and Civilian	10	20	22	26	28	27
Total Flying Cadets	19	169	165	168	148	127
Graduated RMA; Commissioned	0	9	16	28	20	9
Transferred	0	0	12	28	21	116
Discharged	0	1	0	0	2	2
Total Flying Time	58 hrs 17 min	628 hrs 22 min	1496 hrs 3 min	1386 hrs 5 min	1466 hrs 59 min	262 hrs 41 min
Total Airplanes in Commission on Average	N/A	17 JN-4D 16 SJ-1	10 JN-4D 7 SJ-1	11 JN-4D 6 SJ-1	12 JN-4D 11 SJ-1	26 JN-4D 9 SJ-1
Total Accidents	1	2	0	6	3	2
Fatalities	0	1*	0	0	0	0
Destroyed Airplanes	1	2	8	6	0	0
Period for which data is missing	2 weeks (season opened)	4 days	1 week	1 week	none missing	2 weeks (season ended)

*One enlisted man was killed when struck by a propeller.

pared for use as a temporary school for mechanics and a permanent school for armorers. This respite in flying also provided the SCAS Commandant with an opportunity to strengthen a rather shaky organizational structure.

A "MAJOR" REORGANIZATION

During the first six months of operation, Wilbur Wright Field had five Commanders:

Maj. Arthur R. Christie	Jul 6-Sep 26, 1917
Lt. Col. George M. Bomford	Sep 27-Dec 19, 1917
Maj. Leo G. Heffernan	Dec 19-24, 1917
Maj. Walter R. Weaver	Dec 24-29, 1917
Maj. Arthur E. Wilbourn	Dec 30, 1917-Jun 28, 1918

Major Wilbourn, who served as Commander for the first six months of 1918, was not perceived in a favorable light by his peers, one of whom was Major Heffernan. As a captain, Heffernan had led the first enlisted men onto the post. As a major, he had preceded Wilbourn as Commander of the post for one week in December. He had therefore spent more time at the young installation than almost any other officer, and he kept a diary of his experiences. He noted that Major Wilbourn was "a very officious type of officer and cordially disliked by all who knew him in the Air Service. He didn't last long in the game, chiefly because he could not be taken up in a plane."[29]

Though he apparently had no desire to fly—even as a passenger—Wilbourn appears to have had a good head for management and a strong hand for organization. He left an excellently-detailed annual report dated May 31, 1918, which covered operations from the installation's inception. Though highly critical of the poor state of affairs he found upon assuming command, he detailed both the situations and the remedial actions he directed. They were sometimes drastic, and therefore would have been considered unpopular, but they were effective. By May 31, 1918, the function was much improved.

Major Wilbourn gave praise sparingly, but did give it where it was due. His chief satisfactions apparently came from the "flying instruction department" and the medical corps. He praised the organization and conduct of these functions and attributed the bulk of their difficulties to outside forces. Other agencies did not fare so well at his hands, and his attention was focused sharply on internal problems.

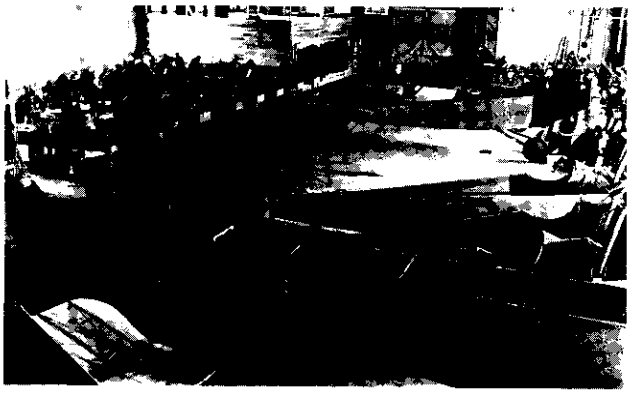
Two departments in particular required various degrees of remedial action: Engineering and Supply. "The heart of Wilbur Wright Field," its Commanding Officer declared, was the Engineering Department. "Upon [it] depends the whole fabric of maintenance and operation of the field."[30] Yet he was clearly dismayed by the conduct of the department.

To begin with, Engineering had charge of a large span of operations in 1917-1918. To cover the same duty in the 1980s would require several separate organizations, including civil engineering, airplane field maintenance, organizational maintenance, and an aircraft engine training school. Civil engineering functions encompassed many of the same responsibilities handled by today's civil engineers, including surveying, cartography, drafting, utilities (lighting, water, and sewage), steam and emergency electrical power, and maintenance of roads and grounds, ranging from streets to flower beds.

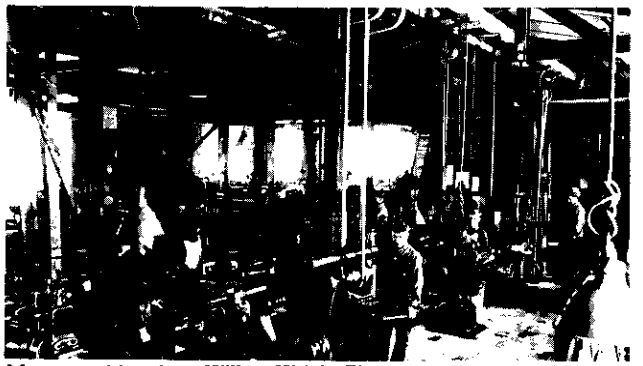
A major responsibility in 1917 was repair and maintenance of buildings. Major Wilbourn cited shoddy workmanship, inferior materials, and haste of the construction effort as the chief sources of the engineers' problems and declared that a large amount of unnecessary work was being done "due to the careless, if not worse, way in which work was, and is being done, on the Post." Better quality control and closer supervision during initial construction would have obviated a significant portion of the repair, replacement, and maintenance costs he was forced to assume. Compounding the problem was the "constant friction between the enlisted workmen and those furnished by the Construction Company" over the question of who was to pay for the materials and labor necessary to correct the defects.

Another principal area of responsibility of the Engineering Department was the procurement and support of the aircraft used for training by the SCAS. Major Wilbourn defined the Division's responsibilities:[31]

> It is required to secure sufficient ships; to assemble them and keep them in proper repair; supply them with fuel and lubricants; record the performance of all motors, propellers, planes etc., to care for and replace broken parts; secure and return wrecks.



Wire and metal work shop, Wilbur Wright Field, January 18, 1918. Fuselages are Curtiss JN-4D Jenny two-place biplane trainers flown by Signal Corps Aviation School instructor pilots and flying cadets.



Motor machine shop, Wilbur Wright Field, January 29, 1918. Building 252 on Allbrook Drive (Area C) now stands on the site of this shop.

Propeller repair department, Wilbur Wright Field, 1918

In order to carry out these duties, moreover, the Engineering Department had to train its own airplane engine mechanics, beginning with a "trade test" of enlisted men to determine their "trade fitness" for this new occupation.

Histories and maintenance records of individual airplanes had not been kept during the six-month flying season. Consequently, the Engineering Department could not determine the quality or quantity of work performed; even the "in-commission" rates of aircraft quoted earlier in this chapter were reconstructed after the fact by flying instruction staff from incomplete monthly records.

As far as can be determined, there were several areas that caused continuing maintenance problems. One, for example, was excessive failure of propeller blades. Shortages of propeller hubs compounded this situation and nearly forced cancellation of all flying in September until new parts arrived. When the second flying season opened on April 15, 1918, the problems remained unsolved and plagued the mechanics throughout the spring.

Serious difficulties also arose with the OX-5 engine in 12 JN-4Ds. At the time Major Wilbourn was finishing his report in May, airplane mechanics were struggling with leaking exhaust valves in the OX-5 power plant. Apparently an excessive carbon content in the valves made them too hard, or the valve seats in the motors were so soft that the valves hammered the metal away. Regardless of the primary cause, Major Wilbourn felt the problem indicated that "the assemblers of the motors [in the factory] . . . failed to seat the valves properly."

Valves and propellers were not the only parts beset by manufacturing defects. Airplanes arriving from the Curtiss Company's Canadian plants were found to be poorly assembled. The quality of dope and methods of application were "inferior to a degree" that required shipping 13 of the JN-4Ds to the Aviation Repair Depot at Indianapolis, Indiana. The Depot had to re-dope practically the entire fabric of wings, fuselages, and tails. At the end of May, the Engineering Department fully expected "upwards of 20" more airplanes to arrive from the factory in similar condition.

Major Wilbourn was also highly displeased with "the most chaotic condition" of the Supply Department. All

Military airplane mechanics balance propellers at Wilbur Wright Field, January 20, 1918. Holes punched in the wood blades were filled with solder to balance them.

1917 records were in "very bad shape," especially those pertaining to property accountability. Large numbers of vouchers were missing and dozens of invoices sent by the Supply Department were never returned. No vigorous efforts had been made by the department to prepare Reports of Survey for missing property. Moreover, attempts of the Supply Officer during the first three months of 1918 to correct the deficiencies and discrepancies proved futile. Major Wilbourn's remedy was simple. The Supply Officer was summarily relieved. A board of disinterested officers was appointed to survey all Signal Corps property on Wilbur Wright Field.

The Quartermaster Department, established in early June 1917, also had its share of problems in each of its five elements (administrative, finance, supply, transportation, and reclamation). For example, the administrative division operated for nearly a year without Quartermaster Corps-qualified administrative enlisted men. Signal Corps soldiers, unfamiliar with Quartermaster regulations, policies, and procedures, had been pressed into service as interim substitutes. It was not until March and April 1918 that 32 QMC-qualified enlisted men arrived on station.

The finance and accounting branch had been concerned solely with paying minor accounts in the local area. Officer and enlisted payrolls had been handled directly by the Office of the Department Quartermaster, Central Department, Chicago, Illinois. However, in December, the Central Department directed the local branch to pay all military personnel at both Wilbur Wright Field and at McCook Field (a Signal Corps airplane experimental testing facility established in late 1917 near downtown Dayton). It was, in addition, to pay the "expense accounts" of all Signal Corps civilian employees in Dayton. Monthly disbursements jumped from $1,146.70 in October to $168,652.48 the following May. Total disbursements during that period reached $622,024.40.

In the Quartermaster area of supplies, a limited number of records (which were not always complete even when posted) and personal interviews convinced Major Wilbourn that the Quartermaster Department had made "no attempt . . . to provide an adequate supply" of food, clothing, and incidental supplies during 1917. For example, from June through December individual squadrons had maintained their own messes (dining halls). Each organization had purchased fresh produce and meat from local area markets, and made daily runs in its own trucks.

In January 1918, a sales commissary was established. Individual purchases were consolidated into one system, thereby economizing on vehicle usage and achieving savings on bulk sales. The Wilbur Wright Field Quartermaster negotiated with local contractors for all fresh meat and vegetables. Wilbourn was satisfied that the quality of the meat furnished was excellent and the prices were good.

A further consolidation freed the installation of dependence on area bakers. Until March, all bread and pastries for the post were purchased from Dayton commercial bakeries. On March 25, "field oven number one" began operations. It had a capacity of 216 pounds of bread per run, and during the first three weeks produced 91,708 pounds of bread from 65,935 pounds of flour. In addition to filling Wilbur Wright Field's needs, sales were made to McCook Field and other Army installations in the Dayton area. This reorganization in particular helped put the commissary into the black. Between January 1 and May 31, commissary sales to all Army organizations in the Dayton area totaled $57,034.

In the area of clothing supplies, records indicate that 19,904 items of clothing were issued at Wilbur Wright Field from October through May. These included overcoats, cotton and wool coats, cotton and wool breeches, slickers (raincoats), hats, shirts, shoes, and "leggins."

A Reclamation Division was organized in March that both saved resources and earned money. Provisions were made to clean and repair or salvage clothing and shoes. The shoe repair function was well used, mending 1,207 pairs by the end of May. Other reclamation and resale efforts resulted in a positive cash flow of $608.15 in the same period.

Thus, by the end of May 1918, the Quartermaster Department was at least functional in each of its areas of responsibility.

Another essential area of Post activity was the Medical Department. Major Wilbourn gave it good marks. In fact, he was gratified that the deplorably unsanitary environment that existed at the Post had not generated an epidemic of some sort.

Wilbourn based his opinion on the ambient conditions when he assumed command, plus information gleaned from discussions with the Post Surgeon and other officers. He noted that large numbers of civilian construction employees and their families lived on the base in flimsy shacks of scrap materials. These "squatter camps," filled with men, women, and children, existed in the most primitive and squalid conditions imaginable, violating all essential laws of sanitation.

For example, open shallow-pit latrines lay within a few feet of living quarters. Food was exposed to flies and dust. Garbage was strewn on the grounds around the shacks. Military protests to employing contractors were dismissed with the excuse that any interference with the laborers' lifestyle could result in work stoppages.

The contractors themselves added to the filthy conditions by digging additional open-pit privies all over the Post for the laborers. The facilities were not screened, were seldom cleaned, and contaminated the wells that provided water for the Post, so that large amounts of chlorine had to be added before use.

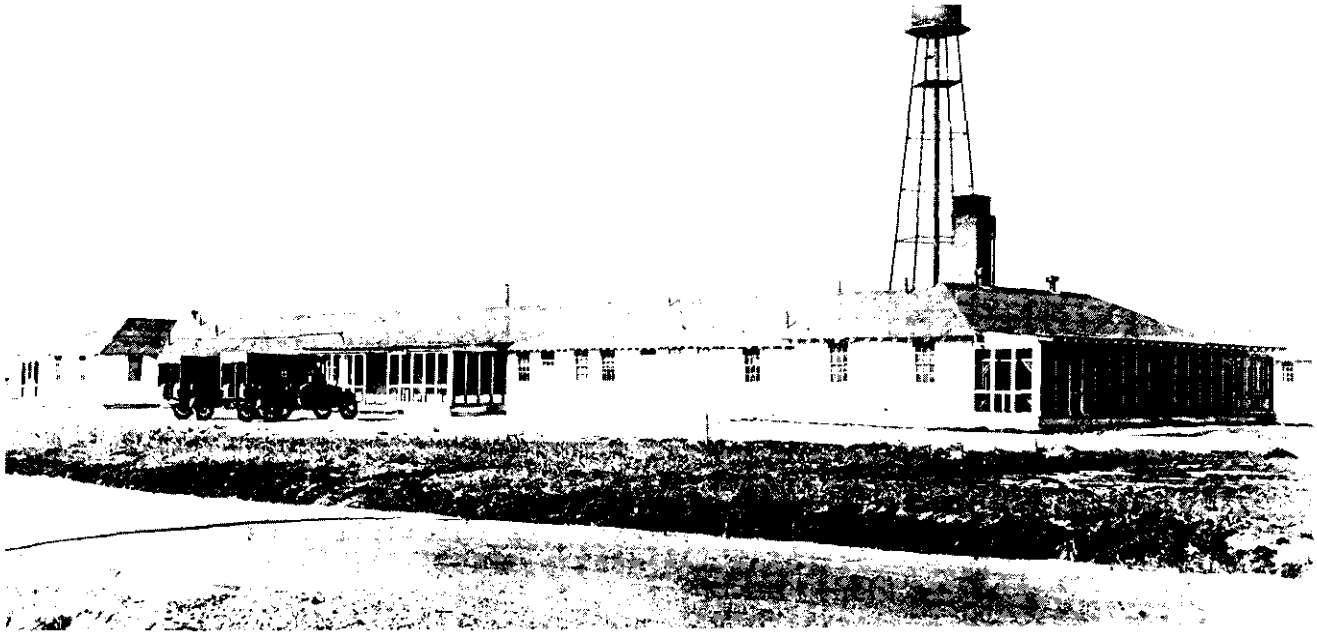
Clouds of flies swarmed in all buildings throughout the field. The Post Surgeon, Maj. Alfred G. Farmer, stated that throughout his long experience in military sanitation he had never seen as many flies in a given area as those that infested Wilbur Wright Field. Adding to the lure of the piles of garbage and the open-pit toilets were huge piles of manure generated by the several hundred teams of horses and mules used in heavy construction work.

The animals were stabled in an exceedingly unsanitary corral along the field's main road. The lot was rarely policed—and never thoroughly cleaned. Major Wilbourn reported that manure was thrown on the ground in front of stalls where it accumulated to such a volume that in the 1918 spring clean-up several tons of dung were removed and burned.

Other significant contributors to the clouds of flies were, in Major Wilbourn's opinion, the "unsanitary Village of Fairfield, Ohio," which adjoined the Post, as well as several nearby farms.

As necessary steps were taken on Wilbur Wright Field to establish a healthy environment, Ohio health authorities worked to improve the general sanitary conditions in the surrounding district. By the end of May, Major Wilbourn noted that the water tests indicated chlorination was no longer necessary. He considered the Post to be in excellent sanitary condition, and the problems in the surrounding area much improved.

Despite the sanitation problems, the death rate from disease was exceptionally low. Major Wilbourn credited this to the efforts of the Medical Department, headed by Major Farmer, the Post Surgeon. On his arrival on July 16, 1917, Major Farmer had assumed command of a staff of four. The initial staff had to cope as best they could without



The Unit One hospital at Wilbur Wright Field was constructed in 1917 and expanded in 1918. Though built as a temporary structure, this and other buildings throughout the installation remained in use for a number of years.

a permanent facility; the first hospital building, one of the last on Post to be completed, was not ready until August 21.

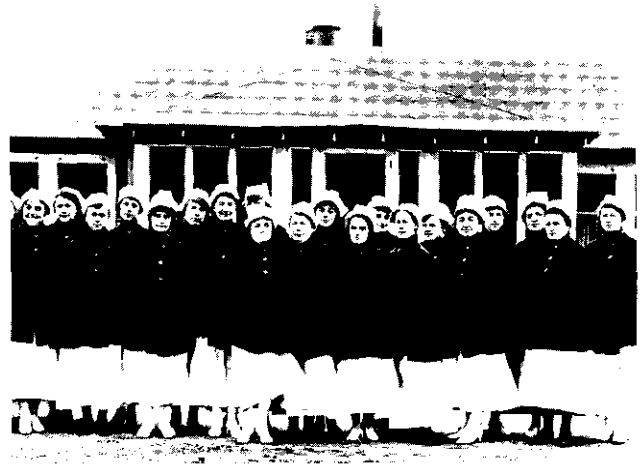
In the meantime, on July 18, a tent was used as an isolation center when the first illness requiring hospitalization proved to be the highly-communicable scarlet fever. Since the weather was mild, the only hardship this entailed was an immediate search for a bed net to fend off flies.

Until December 21, 1917, the installation was practically free of communicable disease. On that date some squadrons arrived from Texas bases bringing ailments such as measles, mumps, and scarlet fever. The two buildings then in use as hospital facilities were soon overwhelmed, underscoring a need for additional capacity. By March an addition to the Unit One hospital building was completed and brought total beds available to 89.

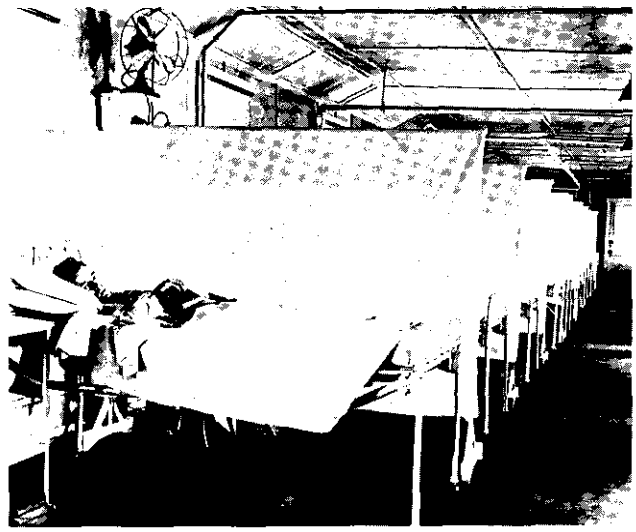
In all, by May 31, 1918, the Medical Department had treated 1,873 cases. Of these, only six resulted in death: three from illness and three from accident, including the one flying mishap noted earlier. Fortunately, Wilbur Wright Field had escaped the more serious complications of measles, such as pneumonia, which resulted in high death rates at other bases. The medical staff by mid-1918 included 14 physicians and dentists, 11 commissioned nurses, and 63 enlisted men.

By mid-1918 the domestic service "utility" functions of the field were also nearing satisfactory levels of operation. As mentioned, sanitation problems connected with the large temporary work force, such as insects and impure water, had been addressed. Three driven wells were producing 340,000 gallons of pure water daily. The sewage system was nearing satisfactory function. In addition, the Dayton Power and Light Company was meeting the Post's monthly power requirement for 660 kilowatts of electricity.

A new telephone system was completed, giving Wilbur Wright Field and adjacent Fairfield Aviation General Supply



Nurses at Wilbur Wright Field, 1918.



A young soldier at Wilbur Wright Field receives treatment in the post hospital.

Depot 229 instruments.* Calls averaged 5,200 a day. Fortunately for the success of the cross-country flying program, the surrounding rural districts were fairly well covered with telephone nets, according to Major Wilbourn, and thus provided quick notifications of all landings, forced or otherwise. A fairly common occurrence was a call from a chagrined pilot on his first cross-country flight who had gotten lost and run out of gas.

AVIATION MECHANICS' SCHOOL

While Major Wilbourn was addressing his internal problems, he had also to attend to his role as host for two essential Signal Corps activities that began at Wilbur Wright Field in the non-flying winter months from mid-December until April.

The first of these to be organized at the field was an Aviation Mechanics' School. According to Allied manning experience in Europe, each combat-ready airplane required the support of 47 ground-force personnel, including officers and enlisted men in engineering, supply, administration, maintenance, etc. The largest single category of these supporters was "aviation mechanicians," who carried the enlisted ranks of:

MSE (master signal electrician, which would equate roughly to the modern rank of master sergeant, or E-7, in charge of squadron airplane maintenance)
Sergeant First Class (E-6)
Sergeant (E-4)
Corporal (E-3)
Private (E-1)

Experienced aviation mechanics were in short supply after war was declared in April 1917. The few that existed outside of the military were already working for unprecedented wages in the civilian war effort. Experienced motor vehicle mechanics were generally in greater supply, but by fall most of them were also occupied by the war effort, either in the Army or in civilian support functions.

By November 1917, the Aviation Section was in critical need of both types of mechanics. As a result, on November 1 the War Department directed that 5,000 mechanics be transferred immediately from the National Army to the Aviation Section.[32] The problem then became one of transferring these mechanics' skills to the new area of aviation. This was handled through both short- and long-range program objectives.

Two programs were set to provide short-term results. One effort established short-term training schools at the five northern flying installations (Wilbur Wright Field, Chanute, Scott, Selfridge, and Hazelhurst), during the winter months when flying instruction was impossible. The other effort involved private industry. In industrial communities such as Dayton, selected airplane and engine factories and garages were asked to open their facilities to groups of 25 soldier-students for on-the-job training. Nearly a score of companies willingly inconvenienced themselves in this way, providing training for about 2,000 men.

Instructors for the five temporary schools came from both outside and inside the Army. Private companies were canvassed for experienced foremen who could add their technical competence and supervisory skills to the ranks of Signal Corps instructors. A special evaluation board selected 60 foremen for such service. Of these, 17 were commissioned as first and second lieutenants, 48 joined the enlisted ranks from corporal to MSE, and 5 accepted lower-grade duty. After three weeks of training at Selfridge Field in December, they were distributed to the new schools in January as instructors in such specialties as "woods, propellers, wing repair, fabrics, wire work, soldering, tires, alignment, fuselage, motors, and motor transport."[33]

Within the Aviation Section, the more highly skilled mechanics were tapped to serve as instructors. This was particularly necessary in the interim period between the opening of the schools and the arrival of the newly-oriented instructors from Selfridge Field.

The situation at Wilbur Wright Field was typical. The aviation mechanics' school opened December 17 in the twelve Unit One hangars which had been used for flying instruction. In command of the school was Maj. W. R. Weaver, assisted by Mr. R. E. Dunn, a civilian who also served as chief of motor transport instruction. The 42nd and 44th Aero Squadrons, permanently assigned to Wilbur Wright Field, provided base operating services to the school. Students had arrived from various midwest airfields on temporary duty from 20 aero squadrons: 42nd, 44th, 47th, 149th, 151st, 159th, 162nd, 163rd, 166th, 167th, 172nd, 211th, 255th, 256th, 257th, 258th, 259th, 260th, 265th, and the 827th.

Instructors and students at Wilbur Wright Field Aviation Mechanics' School pose behind the hangar they used as a classroom. During 1918, the school graduated 1,181 enlisted men. *(U.S. Air Force Museum)*

*See Chapter III for coverage of the Fairfield Aviation General Supply Depot. The depot supported aviation schools at Wilbur Wright Field and at other installations in Illinois and Michigan.

Classes were scheduled to begin on December 17 in three subject areas (airplane, airplane motor, and motor transport), but the instructors from Selfridge Field had not arrived by that date. In the interim, a faculty of 70 was drawn from the sharpest of the enlisted mechanics of the 42nd and 44th Aero Squadrons.

Early in January 1918, the faculty was augmented by the arrival of two second lieutenants and 18 recent graduates of the Instructors' School at Selfridge Field. The instruction staff continued to draw heavily for the duration of the school from the ranks of the two permanent squadrons.

The school faced continuing challenges. Besides the late arrival of Selfridge instructors, equipment had also been tardy. An epidemic of measles periodically forced entire squadrons into quarantine. Forty-eight inches of snow necessitated that all hands fall out on frequent occasion to keep roads open for essential supplies. Teaching continuity suffered; only 62 percent of the available working days were devoted to actual instruction.

Perhaps the most serious handicap faced by instructors related to the skill levels of incoming students and their potentialities (or lack thereof). In theory, all recruits were screened for trade skills at the time of induction into the Army and only those with significant mechanical aptitude were qualified for assignment in mechanical fields. However, experience showed that a significant number of draftees at the time were functionally illiterate in written English, and their oral English was limited to simple conversation. Many had arrived in this country in the arms of immigrant parents at the beginning of the new century and had used their parents' native tongue almost exclusively while growing up. Instructing them in technical matters was difficult.

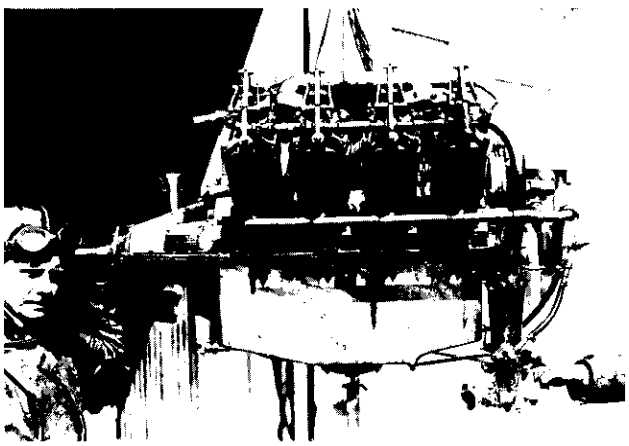
Major Wilbourn also considered that the three-week courses of instruction were designed to further the knowledge of those already proficient in their trades. As it was, the staff frequently encountered students who had no former experience and no knowledge of the occupations or skills in which they were classified; they had to be instructed "from the ground up."

Nonetheless, by its April 7, 1918 closure, the mechanics' training school had 1,181 graduates: 182 in airplane motor, 386 in airplane, and 613 in motor transport courses of instruction.

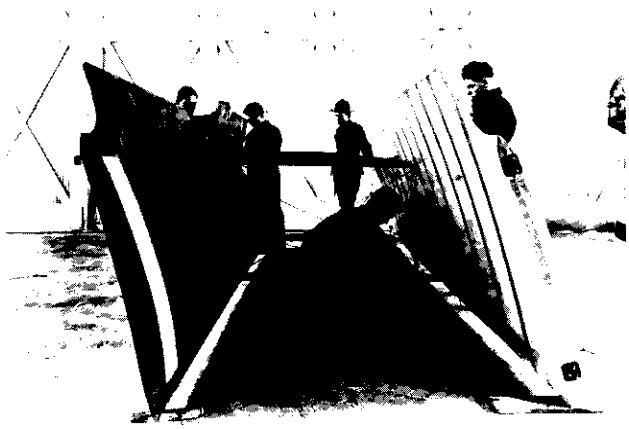
The school had also produced 85 instructors. Even as the school was operating, 45 instructors were transferred to duty with other training installations. Once the Wilbur Wright school closed, 58 more were similarly reassigned. Thus a total of 103 instructors were transferred out of the school. Since only eighteen instructors had been sent to the station to begin with, this meant that "a total of eighty-five enlisted men were withdrawn from the permanent squadrons at this Station for [instructional] duty elsewhere." Major Wilbourn termed them "the very best . . . airplane and motor repair men" on post. Their loss was felt markedly in the ongoing operation of the flying school while their recently-graduated replacements gained experience and competence. By the end of May, however, Major Wilbourn acknowledged that it was "to the very best interests of the service to cripple the flying school temporarily in order that the quality of our enlisted mechanics in general may be improved."[34]

The training school for aviation mechanics at Wilbur Wright Field contributed significantly to the overall effort of the Air Service. Its 1,181 graduates joined 1,482 more from the other four northern flying fields. Together they formed the vanguard of the 10,000 aviation mechanics trained by May 1, 1918, and provided a valuable baseline experience for the instructional heritage of the Air Service.

Instructor and students of the Mechanics' School examine a training airplane fuselage in the erection and repair shop, January 25, 1918. *(U.S. Air Force Museum)*



After a 48-hour continuous run on a test stand at Wilbur Wright Field in 1918, a 90-hp Curtiss OX-5 engine is removed for subsequent examination of all its components. This 4-cylinder engine powered the Curtiss JN-4D Jenny primary trainer.



Aviation Mechanics' School students work on the fabric wings of a Curtiss JN-4D trainer.

AVIATION ARMORERS' SCHOOL

A second area of combat operations that achieved increasing importance as the war progressed in Europe was armament.

At the outbreak of the war airplanes were unarmed, although pilots occasionally traded pistol shots. The German Fokker revolutionized offensive tactics with a machine gun mounted and synchronized to fire 500 bullets a minute between the blades of the propeller. Bombs were soon added to offensive aerial strategy. These new concepts in warfare precipitated new requirements in equipment, in the training of pilots, and in support functions such as armament.

As the Allied response developed, each aero squadron needed an armament officer and a score of men to examine aerial armament before and after every flight. This involved inspecting, testing, and tuning all weapons, and ensuring that both machine guns and bombs were in working order. It was a critical responsibility, for according to a contemporary World War I source, "Scores of good aviators [were] killed by reason of guns jamming just at the critical moment."[35]

Two facets of the armament function were assigned to Wilbur Wright Field. The first was testing of all machine guns issued to the Aviation Section to ensure that they were properly adjusted and in good firing condition. The second was an armorer training school to produce new armament officers and their enlisted assistants. Both functions were scheduled to gear up for operation in March 1918, using Unit Two hangars.

In preparation, a central school for both officer and enlisted instructors opened on February 4, 1918, at Ellington Field, Houston, Texas. The curriculum concentrated on mechanism and construction rather than on actual use of bombs and machine guns. Aspects of stripping, care, cleaning, causes of stoppage, loading, and testing were emphasized as important elements of the new career field.

At the conclusion of their training at Ellington, 200 of the armorers transferred to Wilbur Wright Field as the 851st Aero Repair Squadron. On March 18, the Armorers' School opened for final indoctrination of the officers and enlisted men who formed the school's faculty and staff. The course of instruction was fixed at six weeks and covered a complete study of machine guns, their sights and synchronization mechanisms, and the storage and mounting of bombs.

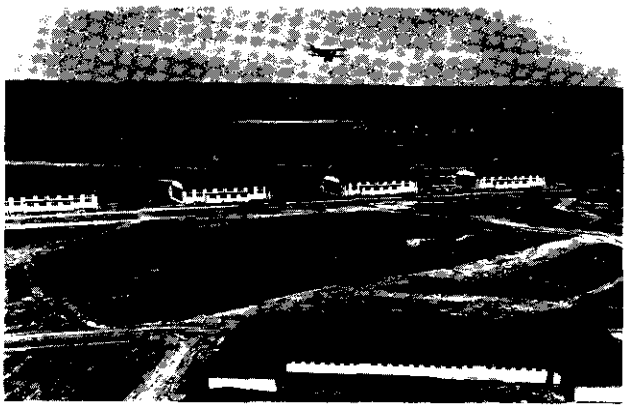
Meanwhile small detachments filtered in, fresh from factory training at the Marlin-Rockwell Company, New Haven, Connecticut, and the Savage Arms Corporation, Utica, New York. Together with the 96 officers and 560 enlisted men who reported as students on April 13 and 20, respectively, they formed the 874th Aero Repair Squadron. Completing the armament network was the 231st Aero Repair Squadron, which reported on April 22 from Ellington Field.

The Armorers' School was organized under authority of the Signal Corps Air Division Gunnery Section and operated under the command of Maj. A. H. Hobley. It operated continuously from March 18 until the conversion of effort at war's end.

In April and May alone, the school hosted 95 officer and 789 enlisted students. The first class graduated June 6, with all 95 officers graduating. The enlisted program graduated 485 out of 560, reflecting the same language and trade proficiency problems that had surfaced in the Mechanics' School.

The gunnery testing function began May 1. Initially 100 Lewis and 100 Marlin machine guns were inspected and tested each day. As operations hit stride, the capacity increased to 100 Lewis and 200 Marlin guns per day.

A portion of the Aviation Armorers' School hangars at Wilbur Wright Field *(Wright State University Archives)*



Curtiss JN-4D Jenny primary trainer in flight over hangars of the Aviation Armorers' School and armament testing station, Wilbur Wright Field, 1918

Lieutenants Mathis, Keenan, Rubin, and Skinner were instructors in the Aviation Armorers' School, Wilbur Wright Field, which operated from March 1918 to February 1919.

TESTING

The gunnery program was not the first military testing function at Wilbur Wright Field. Airplane testing was inaugurated by a March 1, 1918, request from McCook Field to provide hangar space for experimental flying. McCook Field operated under the Airplane Engineering Department of the Signal Corps Equipment Division. Established October 4, 1917, it was located near downtown Dayton about 10 miles by road from Wilbur Wright Field.

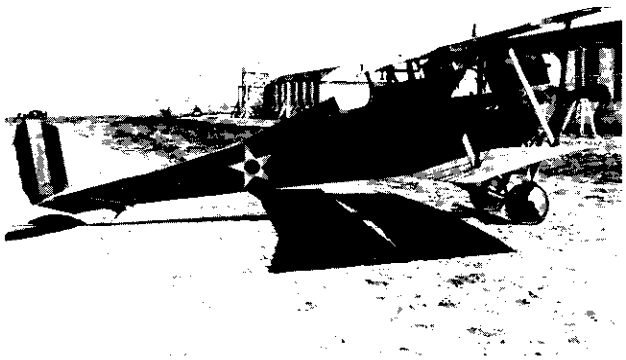
McCook's mission was to research, develop, test, and evaluate U.S. military aircraft and, occasionally, to test airplanes designed or manufactured by Allied nations. Although McCook had its own flying field, space was limited. From McCook's inception, it was understood that a certain amount of both hangar space and maintenance support might be available from Wilbur Wright Field.*

The first such request was in conjunction with the brief testing of three Italian airplanes: one SVA single-place "Scout," one Pomilio two-place fighter with a Fiat engine, and one SIA two-place fighter with a Fiat engine. The airplanes' arrival on March 19, 1918, marked the debut of the facility as a test site for modern military aviation.

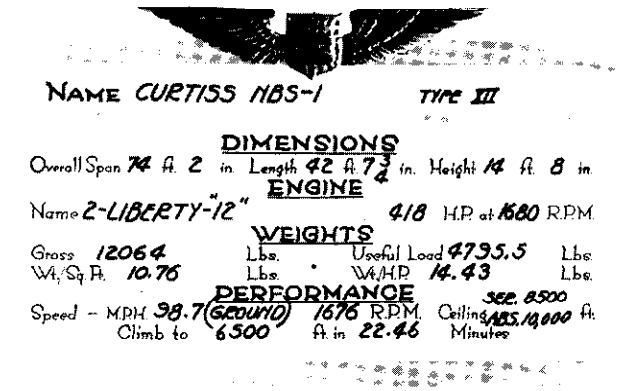
The initial tests were not of great moment, since both the Pomilio and the SIA had been badly damaged while enroute in crates from Italy. The SVA was in comparatively good condition, however, and underwent several weeks of flight testing by an Italian air force pilot. After the Pomilio's fuselage had been repaired, it, too, was successfully flown for several weeks of tests. Upon conclusion of testing at the beginning of May, the airplanes were disassembled and returned to Italy.

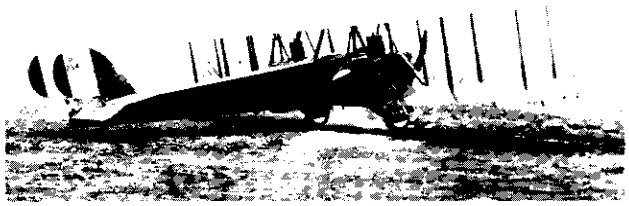
By that time, testing aspects of three other McCook programs had been moved to Wilbur Wright. The first of these began and ended on the same day. An American Morse pursuit [fighter] airplane, equipped with a small Liberty 8-cylinder engine, was trucked from McCook and assembled for testing. On March 28, the first test flight ended abruptly when the airplane crashed from a height of about 50 feet and was destroyed.

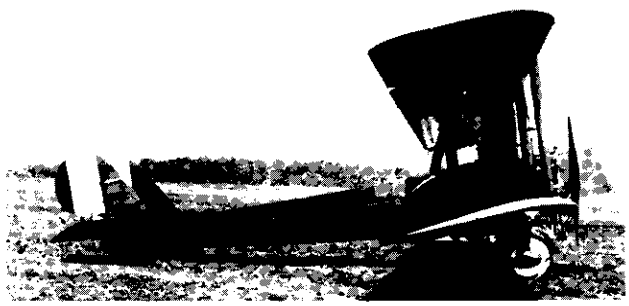
Another short-term effort was more productive. On May 15, a French LePere pursuit equipped with a Liberty engine arrived for a series of tests that were to be conducted by three French pilots. At the time of Major Wilbourn's May 31 annual report, the airplane had flown almost daily.



This Italian Air Force SVA (Societa Verduzio Ansaldo) with U.S. Army Air Service markings was tested at Wilbur Wright Field in 1918 by McCook Field aeronautical engineers. This model was the Italian Army's outstanding fighter of World War I. *(U.S. Air Force Museum)*







Specifications of the Curtiss NBS-1 biplane, twin-engine bomber tested by the McCook Field Engineering Division at Wilbur Wright Field

*More details on McCook Field's mission may be found in the specific coverage of McCook in Chapter IV.

A longer-range program began April 20 when Wilbur Wright Field agreed to furnish McCook with accommodations and limited logistical support for eight airplanes, including British DeHavilland DH-4 reconnaissance and Bristol pursuit aircraft. The support included not only hangar and shop space, but also a force of enlisted mechanics to both assemble and maintain the airplanes, particularly the engines.

For its part, McCook Field agreed to furnish two Liberty engines and two instructors to assist in training Wilbur Wright Field mechanics. McCook also promised to provide time on the DH-4 airplanes being tested in order to upgrade Wilbur Wright Field pilots for this new type of airplane.

By April 24, one DH-4 and one Bristol fighter had arrived. The career of the Bristol fighter was brief; it crashed and was destroyed May 7. The DH-4 enjoyed more success, and was soon joined by seven more DH-4s manufactured by the Dayton-Wright Airplane Company south of Dayton. To support these aircraft, 40 to 50 enlisted mechanics received 20 days of on-the-job training on the Liberty engine. Despite the fact that McCook did not follow through in setting aside a DH-4 specifically for upgrading Wilbur Wright pilots, by the end of May at least 45 pilots had gained considerable experience in handling the new airplane. Moreover, every engineering officer on station had taken personal initiative to study the structure of both the DH-4 and its engine.

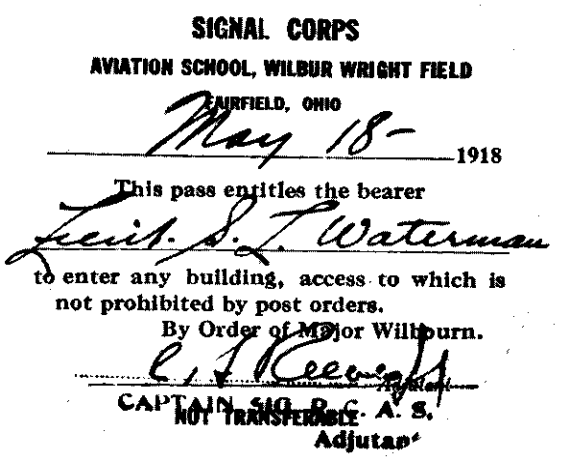
SPRING FLYING

Airplanes, cadets, and instructors migrated northward from southern "winter quarters" with the advent of spring. As the flying instruction program reorganized at Wilbur Wright Field, it was discovered that only six of the 18 Reserve Military Aviators sent to serve as instructors had flown more than 50 hours themselves. The remaining 12 needed special accelerated instructors' training before joining the staff. In the meantime, pilot training resumed on April 15, 1918, utilizing the six already-qualified instructors.

Students and instructors alike faced hazardous field conditions. In late March, a contractor had begun smoothing and seeding the turf of the flying field (there being no hard-surfaced runways), but work was not finished by the time flight training resumed. Consequently, large numbers of laborers with assorted equipment were constantly on the field, providing daily hazards for students.

To work around these conditions the cadets were divided into two groups so that while one group spent the morning in class, the other was on the flightline, with reversed schedules in the afternoon.* This kept the number of cadets on the flying field at a manageable level. At first the flying field was divided into two sectors, one for dual control flights and one for solos. This proved impractical. A more efficient and, most likely, safer plan was adopted in which the entire field was devoted to dual instruction in the morning and solo instruction in the afternoon, with a small portion of the field permanently set aside for cross-country flying and radio airplanes.

By May 31, the faculty had increased to 25 instructors and there were 180 cadets in various stages of instruction. They flew a cumulative average of 66.6 hours per day, with an average of 22.5 airplanes in commission. One cadet had graduated as a Reserve Military Aviator, 16 were ready to graduate, two had been discharged because of flying deficiencies, and the school had suffered its first flying fatality when one cadet died in a crash.



SIGNAL CORPS
AVIATION SCHOOL, WILBUR WRIGHT FIELD
FAIRFIELD, OHIO
May 18- 1918
This pass entitles the bearer
Lieut. S. T. Waterman
to enter any building, access to which is not prohibited by post orders.
By Order of Major Wilburn.
CAPTAIN, SIG. R. C. A. S.
NOT TRANSFERABLE
Adjutant

General passes such as this one permitted the bearer to enter nearly all facilities of the Signal Corps Aviation School at Wilbur Wright Field.

Life was not all work and no play at Wilbur Wright Field. Shown are members of the Wilbur Wright football team, 1917-1918.

*The academic curriculum included courses in military studies, gunnery, radio, photography, airplanes, engines, poison gas defense, and aerial navigation. The flying instruction proceeded from dual control to solo instruction, then to cross-country.

OVER THERE AND BACK

Records maintained between June and November 1918 indicate that both the flying instruction program and the armorers' school contributed significantly to the Air Service record in Europe. Four of the original aero squadrons at Wilbur Wright Field later earned combat credits in France. The 12th Aero Squadron was cited for its participation in aerial operations in the Lorraine, Ile-de-France, Champagne-Marne, Champagne, St. Mihiel, and Meuse-Argonne battles. The 13th and 20th Aero Squadrons flew in the Lorraine, St. Mihiel, and Meuse-Argonne engagements. The 19th Aero Squadron flew liaison missions in France between January and March 1918.[36] Wilbur Wright Field's first Commanding Officer, Maj. Arthur R. Christie, subsequently promoted to the rank of lieutenant colonel, served as Chief of Air Service, V Corps, in the St. Mihiel offensive, August 10-September 16, 1918.[37]

At 11:00 a.m., November 11, 1918, World War I fighting ceased. The Great War was over. The Magnificent Adventure ended in glory; "America's boys" had helped make the world safe for democracy.

World War I victory dance at Wilbur Wright Field, featuring Air Service amateur musicians and ladies from the nearby villages of Fairfield and Osborn, Ohio

U.S. Army soldiers march up Main Street, Dayton, Ohio, during World War I victory parade, November 1918. *(Dayton and Montgomery County Public Library)*

Priorities shifted. Just as America had clamored for instant armament in April 1917, it now demanded immediate relief from the burden of supporting nearly five million men under arms.[38] While Wilbur Wright Field's military population in November 1918 is not stated specifically in available sources, the installation was probably operating near its planned peak of 1,700 persons.

Demobilization caused drastic changes at installations across the nation. At Wilbur Wright Field, all training ceased by the end of November. Flying was limited to the experimental and test aircraft participating in McCook Field programs. Emphasis shifted abruptly from training pilots and armorers to serving as a temporary repository for war surplus materiel.

Effective January 10, 1919, Wilbur Wright Field was merged administratively with the Air Service Armorers' School and nearby Fairfield Aviation General Supply Depot.[39] The new unit was named the Wilbur Wright Air Service Depot (WWASD) and its Commander assumed control over all three organizations. The designation "Wilbur Wright Field" was continued until 1925, although functions of the field were administered by WWASD and its successors.*

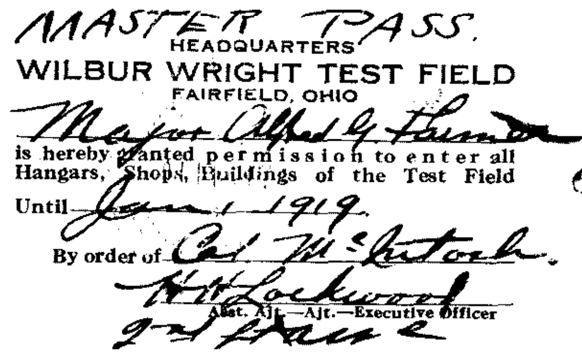
1100 hours, November 11, 1918
THE "WAR TO END ALL WARS" HAD ENDED.

U.S. Army Air Service strength stood at 195,023 officers and enlisted men. Airplane inventories reflected 7,800 biplane trainers (largely Curtiss JN-4 Jennys); 1,000 service airplanes (primarily DH-4s manufactured in American factories); and 5,000 combat-type airplanes (purchased abroad from English, French, and Italian companies).

Air Service strength in Europe totaled 5,707 officers and 74,237 enlisted men. Combat training had been completed by 1,647 pilots and 841 observers. Of these, 1,402 pilots and 769 observers had flown combat sorties over enemy lines.

The Air Service lost 818 brave men during the war in Europe: 164 aircrewmen were killed in action or died as a result of wounds received in action, 319 were killed in airplane accidents, and 335 died from other causes. Other Air Service casualties included 200 missing in action, 102 prisoners of war, and 133 wounded.

Sources: "An Air Force Almanac," *AIR FORCE Magazine*, May 1982, p 171; Maurer Maurer, ed., *The U.S. Air Service in World War I*, Vol. I: *The Final Report and a Tactical History* (Washington, 1978), 67.


MASTER PASS.
HEADQUARTERS
WILBUR WRIGHT TEST FIELD
FAIRFIELD, OHIO
is hereby granted permission to enter all Hangars, Shops, Buildings of the Test Field
Until Jan. 1, 1919.
By order of
Asst. Ajt.—Ajt.—Executive Officer

Master pass to enter all sensitive areas of the Wilbur Wright test field. In these hangars and shops were located aircraft and equipment from the Engineering Division at McCook Field in Dayton, Ohio. Because of McCook's limited runways, considerable flying of experimental aircraft was done at Wilbur Wright Field.

Martin MB-2 twin-engine biplane bomber circling over Wilbur Wright Field in 1920. This all-American aircraft was produced too late for World War I service but was the Army Air Service's front-line bomber for several years into the 1920s. The heavy bomber demonstrated its capability when it sank five obsolete warships anchored in Chesapeake Bay during tests in 1921 and 1923. *(U.S. Air Force Museum)*

*By the time the designation "Wilbur Wright Field" was dropped in 1925, the depot function had changed name several times. These changes are explained in detail in Chapter III, Fairfield Air Depot. In brief, they are:
Wilbur Wright Air Service Depot, January 10, 1919
Aviation General Supply Depot, November 3, 1919
Air Service Supply and Repair Depot, Fairfield, Ohio, September 20, 1920
Fairfield Air Intermediate Depot, January 14, 1921.

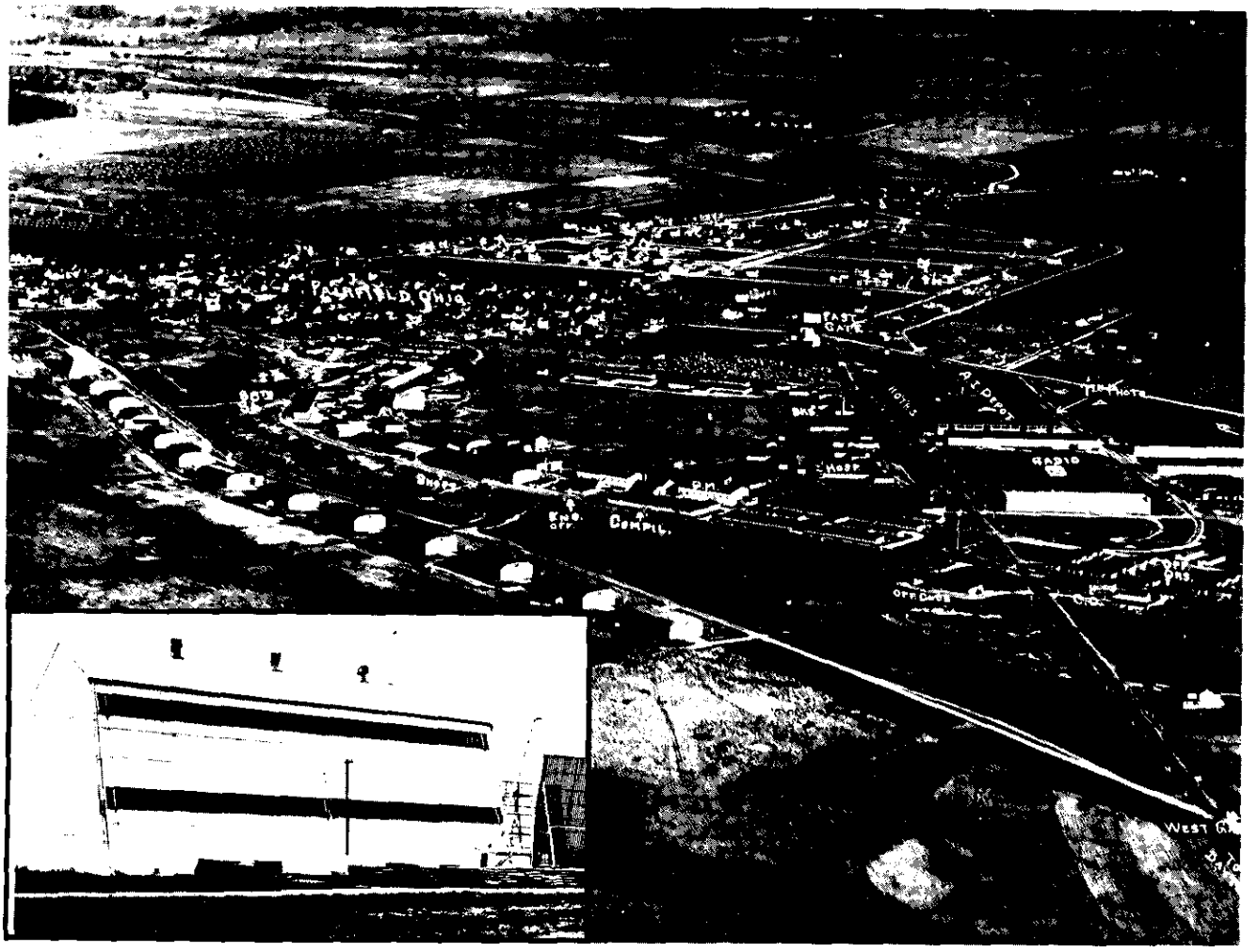
Social gathering at Wilbur Wright Field, 1921

Military strength at WWASD was initially 70 officers and 830 enlisted men, but as demobilization continued uniformed strength declined rapidly. On February 20, the flying school, armorers' school, and Squadrons A, B, I, K, L, M, N, and O were demobilized. The continuing function of the depot was assumed by an increasing civilian population. By the end of 1918, the civilian work force peaked at 1,000 employees.[40]

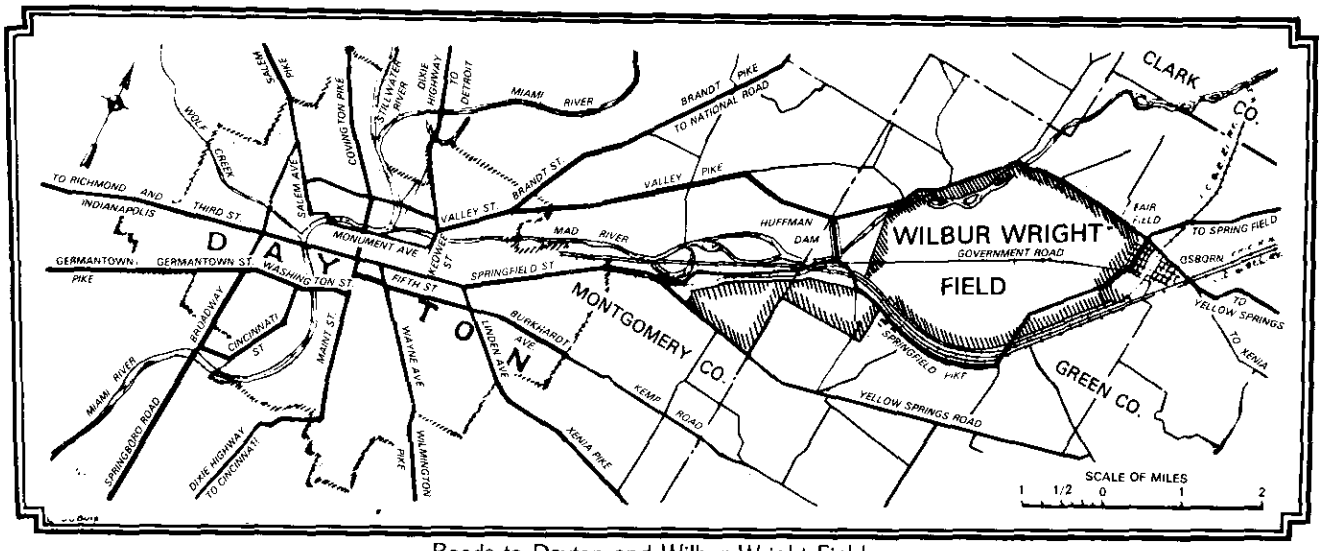
As Army Air Service training fields and stations throughout the nation and overseas closed, supplies and equipment were shipped to major air depots such as WWASD for storage, inventory, and disposal. At the peak of this activity, 77 buildings under depot management, including some hangars, were used to house such items as 2,500 aeronautical engines, 700 airplanes of various series, and thousands of instruments, compasses, watches, altimeters, and gauges of all descriptions. Four of the twelve Unit Two hangars were relocated from the flightline to the interior of the installation and converted to other uses (one became a garage, one a gymnasium, and two became warehouses). Final disposition of all wartime surplus items dominated functions at the Fairfield, Ohio, depot for nearly eight years.

Meanwhile, airplane testing continued on Wilbur Wright Field. On November 1, 1920, the field's role as a test site for programs initiated at McCook Field was formally recognized. Special Order 178 activated a "Department of Testing and Flying."[41] In 1921, the testing facilities were expanded to include a high-altitude bombing range, a two-mile electrically-timed speed course, and equipment for testing of machine gun butts. By 1924, it was clear that the site of Wilbur Wright Field would continue to be used as a center of aviation activity, maintaining the flying heritage begun there some twenty years before.

Until 1924, the site of Wilbur Wright Field was leased by the U.S. Government. In August of that year, a group of prescient Dayton citizens was responsible for the donation of more than 4,500 acres of land, including the site of Wilbur Wright Field, to the U.S. Government. On August 21, 1925, the War Department discontinued the designation "Wilbur Wright Field" in anticipation of the establishment of the new and larger reservation, to be known as "Wright Field" in honor of both illustrious brothers. In 1927, the expanded reservation was formally dedicated, and became the new home of the Air Corps Materiel Division as it relocated from McCook Field. The testing activities related to McCook programs continued in the interim from 1925 until 1927 and then became a function of the new facility.



Wilbur Wright Field, July 1923. A major addition since World War I was the balloon hangar at the extreme left on the hangar line. In the far upper portion of the photograph are the villages of Fairfield and Osborn, since merged to become Fairborn, Ohio. *(U.S. Air Force Museum)*



Roads to Dayton and Wilbur Wright Field

Land purchased by the Dayton Air Service Committee, Inc., and donated to the government in 1924 (outlined) was dedicated as Wright Field in 1927 in honor of both Wright brothers. This land included the site of Wilbur Wright Field plus an additional tract of land (shaded at left), part of which is currently in Area B of Wright-Patterson Air Force Base.

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From Huffman Prairie To The Moon
The History of Wright-Patterson Air force Base

From Huffman Prairie To The Moon - was divided into twelve parts due to the large size of the document. At the beginning and end of each division we have included a page to facilitate access to the other parts. In addition we have provided a link to the entire report. In order to save it, you should right-click on it and choose save target as. This is considered the best way to provide digital access to this document.

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